

Robust 'net groupware may be a year away (Intranets, following page 32), but the groupware skills set is already shifting (page 85).

COMPUTERWORLD

The Newsweekly for Information Technology Leaders
News updates, features, forums: www.computerworld.com
November 25, 1996 · Vol. 30 · No. 48 · 122 pages · $3/Copy $48/year



By Justin Hibbard and April Jacobs LAS VEGAS

PCs cost too much to maintain and don't deliver enough return on investment.

That message is getting under vendors' skin, judging from last week's **Comdex/Fall '96** show. Whether they showed off network computers **Comdex, page 17**



Repeat traffic is goal of customized Web sites

By Mitch Wagner

IS MANAGERS AT major corporations are trying to turn their World Wide Web sites into the cyber-equivalent of Alice's Restaurant — a place where you can get anything you want.

With the one-size-fits-all mentality now prevalent on the Internet, most Web sites offer the same view to all visitors. But information systems managers are starting to customize and personalize sites, so visitors get a unique view, tailored to their needs and desires.

For instance, The Virgin Group of Companies, the British consumer conglomerate, last week announced its Virgin Net online Internet service, complete with customization features.

Fingerhut Corp., a $a.5 billion mail-order merchandiser, next month plans to open a version of its folksy Andy's Garage Sale site (www.andysgarage.com) that can be customized.

The Illinois Chamber of Commerce in Chicago and Swiss Bank Corp. are also following the customization trend. Both

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Want to slash costs? No more Mr. Nice Guy

▸ *IS needs to get tough at bargaining table*

By Julia King

HARDWARE AND software vendors have just 36 days to shake the last of this year's IS dollars out of users' pockets and into their own.

Some users will cut favorable year-end deals. But many more will sign poorly negotiated agreements that will cost their companies hundreds of millions of dollars more than experts say they should pay.

Software vendors typically book between 40% and 45% of their total annual sales in the fourth quarter, said Vinnie Mirchandani, an analyst at Gartner Group, Inc. in Stamford, Conn.

"IS traditionally has not done good deals because buying technology was considered mumbo jumbo that only techies could handle," said Joe Auer, presi-

Deals, page 24

IS behind the 8-ball on warehouse loading



By Craig Stedman

THE INCREASING strategic importance of data warehouses is making companies loath to ever turn them off, a fact of life that IS managers said greatly complicates the arduous task of feeding the beasts.

On the one hand, demand for around-the-clock access to decision-support data is a big vindication for information systems

Data warehouses, page 107

UP FRONT

NetPC — not!

You wouldn't buy a diet plan from Godiva, the upscale chocolatier. So why would you buy a network computer from Microsoft?

Yet that's what Microsoft hopes you'll do, and the company has spelled out its vision of the so-called "zero administration" client through a specification it calls the NetPC.



Be suspicious. Microsoft has nothing to gain from the network computer. The network computer is about less software, not more. It's about paying for software that's in use rather than software that's installed. It's about applications that don't care about the underlying operating system. It's about everything that Microsoft isn't.

On the surface, the NetPC specification (at www.microsoft.com) looks a lot like the Network Computer plan put forth by Oracle. But there's one big difference. The NetPC requires Windows. Perhaps Microsoft's goals for the NetPC are best summed up in its own words: to allow "PC vendors to build Intel architecture and Windows-based systems [that] lower the cost of owning PCs." The three winners in that statement are PCs, Intel and Windows, with lower costs bringing up the rear.

Network computers are about everything that Microsoft isn't

How committed is Microsoft to the NetPC? Well, the most specific delivery date for any of the software features is in "future versions of Windows." Microsoft won't offer cheaper concurrent-user licensing for Office 97. That means you'll still have to buy a license for each potential user.

And even as it putatively supports slimmer PCs, Microsoft is prepping a new 121M-byte version of Office. Try loading that puppy over a network!

To give Microsoft its due, this chameleon-like company has always proved agile at adapting to the latest market trends. The NetPC may do what Microsoft hopes: confuse customers and freeze the market. But don't be fooled. This is a specification for a cheap PC, not a network computer.

Paul Gillin, *Editor*
Internet: *paul_gillin@cw.com*

THE FIFTH WAVE
BY RICH TENNANT



"THIS IS YOUR GROUPWARE?! THIS IS WHAT YOU'RE RUNNING?! WELL, HECK – I THINK THIS COULD BE YOUR PROBLEM!"

A jump start for slow Java apps

▸ Microsoft releases Java plug-in for Navigator; Netscape plans upgrade

By Sharon Gaudin

MICROSOFT CORP. and Netscape Communications Corp. are racing to produce a speedy Java-enabled browser that will appeal to corporate developers who are frustrated by sluggish Java applications.

Microsoft this week will release a free plug-in for Netscape's Navigator browser, which has 80% to 90% of the browser market. The plug-in will let Navigator users run Java applets with Microsoft's virtual machine for Java.

Microsoft hopes Navigator users will be impressed by the prowess of Microsoft's Java technology and thus be lured into the company's camp.

A virtual machine is software that allows a computer to run a Java program by interpreting the Java code.

Netscape a few months ago licensed Symantec Corp.'s Just-In-Time (JIT) compiler —, known for its speed — for its virtual machine. The JIT compiler, which speeds up the virtual machine by converting Java software to native Windows applications on the fly, is slated to go into the next version of Navigator. That release is due in the middle of next month.

"People have expectations in terms of speed and performance, and Java has to at least come close to those expectations," said Ken Cooper, vice president of development at Cooper & Peters, Inc. in Boulder, Colo., which builds Java components.



FutureTense's B. C. Krishna

Microsoft's plug-in for Navigator is the best way to get Java applications running quickly and smoothly

THE RACE IS TO THE SWIFT

"When we first started running Java applets, they were [like] molasses. There's a big race going on [between Microsoft and Netscape], and that's going to be a big help for us," Cooper said.

Observers said the first company to caffeinate Java — Sun Microsystems, Inc.'s programming language — will grab a big chunk of market share.

"I got a call late one night from this guy I built a Java application for, and he was saying it didn't work," said Patrick Connolly, president of Investors Edge in Mill Valley, Calif., which designs World Wide Web sites and operates an investment site. "They were running Netscape [Navigator], and it ran like crap. They downloaded [Microsoft's] Internet Explorer, and it ran like a champ."

"When I heard about Microsoft's plug-in, I thought, 'Yahoo! This is going to make my life a lot easier,' " Connolly said.

He hastened to add that with Symantec's JIT compiler, he would expect Navigator to pick up a lot of speed. "Symantec's stuff is worlds better. And in some respects, it's better than Microsoft's."

Paul Mahowald, vice president of retail development at Blockbuster Entertainment Group in Fort Lauderdale, Fla., said he hasn't had trouble with Navigator being slow. He said the issue is that Java is slow.

B. C. Krishna, vice president of technology at FutureTense, Inc., a Web site publishing company in Acton, Mass., said he will use Microsoft's plug-in with Navigator because he sees it as the best way to make his Java applications run quickly and smoothly on Navigator.

Treasury doesn't plan to bite with bit tax

By Gary H. Anthes

WASHINGTON

THE U.S. Department of the Treasury last week said the Internet shouldn't be used to justify new taxes.

No federal "bit tax" or excise tax on electronic commerce is in the works, officials said.

But the tax policy must be reexamined in light of several thorny issues, according to the agency. For example, the ability to conduct anonymous transactions using digital cash "raises compliance issues to new levels of concern," the report said.

"The Clinton administration has been trying to get an international agreement that there should be no special taxes on Internet commerce," said James Love, director at the Consumer Project on Technology in Washington. "It's a good idea to make strong statements to prevent opportunistic, ill-advised tax schemes" by state, local and foreign governments, he said.

The administration's work on Internet tax policy is part of a broader effort to sort out issues of privacy, security and regulation on the Internet. A new task force headed by Ira Magaziner meets twice per month with representatives from 13 federal agencies to craft policy in those areas, Love said.

Magaziner led the unsuccessful effort to overhaul the nation's health care system in President Clinton's first term.

The Treasury Department said it is looking for public comments on its electronic commerce tax report, which is posted at www.ustreas.gov.

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- **MEET THE NEW REP. Ah, sales reps. Can't live with 'em, can't kill 'em. This week on @Computerworld, Lisa Nirell, president of software sales consulting firm Nirell & Associates, explains four types of software salespeople and offers survival tips for dealing with each. Got any horror stories you'd like to share? (www.computerworld.com/forums)**
- **BALANCING ACT. The ability to juggle your professional and personal life as an IS consultant depends largely on your company's culture. This week, consultant Raoul Shanker identifies four types of corporate culture and offers tips for bringing your personal life and career into balance. (www.computerworld.com/careers)**

BIG IRON, SMALLER INVESTMENT

Cost per user in mainframe and Unix server environments

Number of users	Mainframes	Unix servers
50 to 99	$5,183	$7,947
100 to 249	$4,779	$6,036
250 to 499	$3,855	$5,641
500 to 999	$2,883	$5,101
1,000+	$1,225	$4,170

Source: International Technology Group, Mountain View, Calif.

Mean, lean mainframes

▸ *Cost of ownership: It's just not for PCs anymore*

By Tim Ouellette

USERS ARE familiar with vendors that try to slash the cost of PC ownership. Now, high-end users anticipate the same type of cost-cutting from mainframe vendors.

Next year, IBM, Amdahl Corp. and Hitachi Data Systems Corp. will continue to boost the performance of air-cooled CMOS-based machines, cut mainframe software prices and integrate mainframes with Unix and Windows NT environments.

"When people look at mainframe [hardware], they think the ticket price is expensive," said Edward Carr, manager of enterprise systems research at Aberdeen Group, Inc. in Boston.

But software, maintenance and labor costs take up so much of the overall picture that distributed systems can actually cost more in the end, he added.

"We are getting our focus off of smaller servers," primarily because of the cost of managing the systems, said Jack McRae, a systems programmer at the Los Angeles municipal government. The city runs two IBM mainframes and may either expand one or cluster two together.

And with user access to city information on the rise, "now we are talking in terms of mainframes doing a lot of Internet applications that we have now on a Unix box," McRae added.

IN THE WORKS

Specific vendor plans include the following:

- IBM this week will announce a souped-up version of its 10-way CMOS processors that runs up to 360 MIPS, sources said. It will target the very high end of the market.
- IBM will port its Tivoli TME 10 system management software to the OS/390 by late next year.
- IBM will increase CMOS MIPS from 45 to 60 by late next year.
- All vendors will ramp up parallel sysplex pricing plans, a mainframe clustering approach that lets users save money by buying capacity in small increments.
- Release 3 of OS/390, due early next year, will add features to better manage parallel sysplex installations.
- IBM will deliver OS/390 support for Windows NT applications early next year.

Power Computing will license BeOS

By Lisa Picarille

MACINTOSH CLONE maker Power Computing Corp. keeps beating Apple Computer, Inc. at its own game.

The Round Rock, Texas, computer maker is passing Apple on CPU speed, undercutting Apple pricing and this week is expected to announce that it will license Be, Inc.'s much-ballyhooed BeOS.

At Macworld Expo in August, Be stole the show by demonstrating its multitasking, memory-protected, object-oriented multiprocessing system running on a Macintosh clone.

FAMILIAR NAME

The BeOS was developed by a Menlo Park, Calif., start-up headed by Apple's former chief technology officer Jean-Louis Gassee.

Although sources close to Be and Power, who asked not to be named, told *Computerworld* that a deal was imminent [CW, Sept. 9], it took several months to work out the details.

Bringing in the users

By Natalie Engler In one corner, it's the technologists who build the information systems. In the opposite corner, the people who use them. They speak different languages and inhabit different worlds, but they need one another for any technology project to succeed.

A survey last month of more than 300 IS executives cited "lack of user involvement" as the chief reason IS projects fail. It ranked even higher than lack of executive management support and clear business objectives, according to The Standish Group International, Inc., a market research firm in Dennis, Mass.



Stockbroker [illegible] different [illegible]

BAD COMMUNICATION

Jim Johnson, the firm's founder and chairman, blames lack of user involvement on poor communication. "Our industry has created a vocabulary of words most people don't understand," he says. Other IS management consultants point to IS people's lack of preparation, "scope creep anxiety" (the fear

Coming together, page 71

AT&T bill service to slash ISDN costs

By Kim Girard

AT&T CORP.'S large customers can expect to save, on average, up to 30% on ISDN costs with a new service that allows users to roll ISDN charges onto telephone bills.

Traditionally, AT&T users have been billed separately for Integrated Services Digital Network (ISDN) and Software-Defined Networks, which link telephone systems at multiple corporate sites sharing a private phone network.

With the new offering, all calls can be managed on one platform using the company's switch monitoring tools, and contracts can be negotiated to include ISDN.

For example, companies that pay an average of 24 cents per minute for a dedicated ISDN line can expect a 30% to 35% discount, said Will Davis, AT&T's global ISDN product manager. The average discount per customer will be 28% to 33%, depending on volume, he said.

Linda Tratnik, manager of network services at a credit reporting company in Cleveland, said the potential cost savings open doors for increased ISDN use at her company.

"It hasn't been real attractive to do [ISDN] in great quantities," she said. Tratnik said she is taking a networkwide ISDN inventory to determine where the company could save money by installing additional ISDN lines for video and database applications.

"The strongest message is that you can really aggregate all toll usage into one place," Tratnik said.

ISDN lines, which can carry four times as much data as standard phone lines, are typically provisioned by the regional Bell operating companies.

One user said he looks forward to the day when one carrier can consolidate his bills.

"I have 10 phone numbers, and I get eight bills from [Pacific Bell] and eight from AT&T every month," said Bob Larribeau, director of the California ISDN Users Group, who has four ISDN lines.

AT&T's new plan will mostly affect about 120 large customers that use AT&T to manage their private voice, video and data networks.

Dawn Honeyman, an analyst at TeleChoice, Inc., a consultancy in Verona, N.J., said the offering will improve users' ability to direct traffic on their networks.

ISDN ON TAP

1995 ISDN availability in each RBOC region*

Ameritech	66.6%
Bell Atlantic	97.98%
BellSouth	52.16%
Nynex	93.41%
Pacific Telesis	64.3%
Southwestern Bell	62.6%
US West	41.79%

*Lines with access to ISDN from ISDN-capable switches

Source: Federal Communications Commission, Washington

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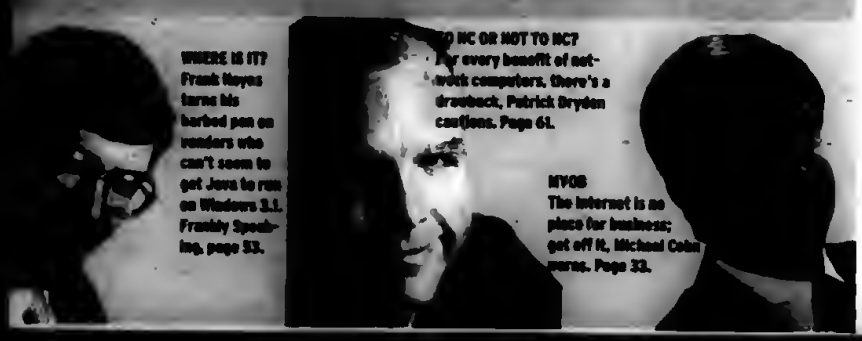
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WHERE IS IT? Frank Hayes turns his barbed pen on vendors who can't seem to get Java to run on Windows 3.1. Frankly Speaking, page 33.

TO NC OR NOT TO NC? For every benefit of network computers, there's a drawback, Patrick Bryden cautions. Page 61.

NVOD The Internet is no place for business; get off it, Michael Cobb warns. Page 33.

ENHANCEMENTS TO PEOPLESOFT'S VERSION 6

Component	Enhancements
Manufacturing	• Production management • Production planning
Distribution	• Enterprise planning • Product configuration
Financials	• Treasury • Expenses
Human resources	• Pension administration • Time and labor

PeopleSoft 6 launched amid user hunger for 7

▸ *Next version will be Internet-enabled*

By Randy Weston

CLIENT/SERVER APPLICATIONS

PEOPLESOFT, INC. will push Version 6 of its applications package at a user conference in San Diego next week, but some users are already looking ahead to the features promised in Version 7.

"Version 7 will be nirvana for us," said Buck Buchanen, vice president of information systems at Snelling, Inc., a Dallas-based employment placement service. "I want to get a look at 6.0 and see what benefits it will have for me. But I know 7.0 is really the one I will get hot about."

PeopleSoft, in Pleasanton, Calif., launched Version 6 last week. It includes for the first time a manufacturing module and architecture designed to better handle the needs of global companies.

ONE YEAR AWAY

Version 7, which is scheduled for release next December, is slated to have Internet-ready applications, a key feature that other vendors already ship. It will also have more integrated modules and an N-tier, distributed computing architecture that ties PCs to multiple servers.

Buchanen said he expects the architecture will better integrate modules such as human resources and payroll. He also wants to see Internet interfaces and more electronic data interchange capabilities.

"PeopleSoft has all the pieces in place with Version 6. Now it's just a matter of getting them to talk to each other," Buchanen said. "Right now, we write interface programs to move data back and forth, or we do other creative things like extract data from one module, run it into our old system, then run it back into the next module."

McDonnell Douglas Corp. in St. Louis is installing the financial and human resources applications of Version 5.1. Steve Nemish, program manager for integrated financial management systems at the aerospace firm, is also looking forward to the seventh-generation product, which he sees as more beneficial to his firm.

"It's a little early for us to move from 5.1 to 6," Nemish said. "With Version 7, that's the point PeopleSoft goes to an N-tier architecture that will fix some of the concerns we have implementing 5.1."

Corrections

Due to a reporting error, "CW.Internaut" [CW, Nov. 18] incorrectly stated the selling price of Dave Garaffa's BrowserWatch World Wide Web site (browserwatch.iworld.com). It was less than $200,000.

Clarification: The chart with our story, "Netscape warns investors of threat from Microsoft" [CW, Nov. 11], was misleading. The figures in the chart could be interpreted to mean 72% of Netscape's users plan to switch to another browser vendor. That isn't the case. What our survey research showed is that of the 154 people surveyed who intend to change browsers, 72% would be switching from the Netscape product.



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E-mail protocol adds to IS load

By Barb Cole

THE NEXT GENERATION of E-mail packages will be a boon for users, but it could mean some changes for administrators.

The Internet Message Access Protocol 4 (IMAP4) is expected to be widely supported in electronic-mail software next year. IMAP4 supersedes Post Office Protocol 3 (POP3), which is best suited for downloading mail to a single machine.

IMAP4, on the other hand, lets users access mail from multiple computers, download it to a client or download just parts of messages.

Because it is a more complex protocol, "IMAP4 will force administrators to think more," said Paul Hoffman, co-chairman of the Internet Mail Consortium.

IMAP SERVERS PROLIFERATE

Company	Product	IMAP support
Control Data	IntraStore	Now
Netscape	MailServer	Now
Lotus	Domino	First half of 1997
Software.com	Post Office	1997
Sun	Solstice Mail Server	Now
Microsoft	Exchange	1997
Isocor	N-Plex	Now
Novell	GroupWise	First half of 1997

VENDOR SUPPORT

Microsoft Corp. and Lotus Development Corp. are readying servers that support IMAP4, a proposed Internet Engineering Task Force standard. And a large number of IMAP4 clients are expected to roll out in the coming months.

MESSAGING STANDARDS

Most companies are accustomed to LAN mail systems, where mail is stored on the server and users do no administration, or POP-based systems that typically require users to download E-mail, said Paul Rarey, a systems architect at Clorox Services Co. in Oakland, Calif. "With IMAP, you can keep a server copy and a local copy," he said.

Russ Han, a computer specialist at Lockheed Martin Corp. in Oakridge, Tenn., said he will have to provide more disk space on mail servers and focus more on backup when he moves 12,000 users to an IMAP-compliant system.

Other administrators said they plan to trim the size of users' mail files. Most companies are still in the early phases of planning for IMAP4, which will require software upgrades on the client and server.

The costs associated with extra server disk space could be offset because early IMAP servers seem to be more scalable than their POP predecessors, users said.

POP PROBLEMS

"POP servers can have big performance problems when users are permitted to configure their clients to frequently check for new mail," said Lori Stevens, manager of project planning at the University of Washington in Seattle. "Each check for new E-mail requires the user to log in to the server again, and this can add an enormous load."

Stevens, who helps support 60,000 users on an IMAP mail network, said the university hasn't seen a rise in the demand for disk space, but rather a shift away from home-directory file servers to the IMAP servers.

STANDARDS BATTLE

SAP pushes architecture on open standards group

By Randy Weston and Patrick Thibodeau

GERMAN SOFTWARE giant SAP AG is urging an open standards group to adopt its recently released architecture as the industry standard for integrating different client/server applications.

Industry analysts said that could undermine the Open Applications Group's (OAG) effort to develop a neutral standard for sharing data among software modules from various vendors.

And a spokesman for SAP competitor PeopleSoft, Inc. called SAP "a big gorilla trying to have its way."

"If you look at SAP's APIs, you'll find they conform to the OAG's standards. SAP just advanced the state of the art much further."

– Barry Wilderman, Meta Group, Inc.

Because of its market power and the slow pace the OAG is moving, SAP's architecture may become the de facto standard anyway, said Tom Gormley, an analyst at Forrester Research, Inc. in Cambridge, Mass.

If SAP is successful, then the OAG is "destined to be a library for the [vendor-produced] interfaces that will become standard in the industry," he said.

Formed last year as a vendor consortium, the OAG's mission is to develop standards so customers can easily integrate best-of-breed client/server applications from multiple vendors without writing additional software interfaces.

So far, the Chicago-based OAG has produced a handful of application programming interface (API) specifications and promises to increase that output to 41 APIs this week and to 60 by early next year.

The OAG is trying to standardize interfaces to link these application types:

- Human resources to financials.
- Human resources to manufacturing.
- Manufacturing to purchasing.
- Manufacturing to management.

But the OAG hasn't produced an overall architecture, so SAP is offering its own. "SAP is moving much faster than the OAG," Gormley said.

COMPLETE PACKAGE

"You need more than some interfaces," explained Gunther Tolkmit, SAP's vice president of technology marketing and representative to the OAG. "Our position is, you need common understanding, like our business framework, in order to have applications work together."

SAP has already released 106 of its own APIs, the key elements in the new business framework architecture that lets third-party vendors link their products to SAP's R/3.

The OAG hasn't announced its position on the SAP proposal. David Connelly, the OAG's chief technology officer, said SAP's architecture is "conceptually" 80% similar to the OAG's plan. The difference is mostly in how SAP uses its APIs to implement its software.

Users don't seem to care who writes the standard.

"A standard is whatever the industry decides to follow, and it really doesn't matter where it comes from as long as everybody decides to follow it," said Carlos Cabera, director of MIS at Sun Chemical Corp. in Fort Lee, N.J.

Timing is everything for IS training

By Julia King

U.S. COMPANIES are budgeting more money for information systems training. The catch-22 is that most IS staffs don't have time to spend it.

"Lack of time is the No. 1 reason companies give for not meeting IS employees' training needs," said Ellen Julian, an analyst at International Data Corp. (IDC) in Framingham, Mass.

Businesses this year earmarked 5% of their overall IS budgets for training, up from 4% last year, according to IDC.

But more money doesn't automatically translate into better-skilled and more productive IS staffs. The rushed nature of most IS projects makes it hard to spare staffers for class time.

"Finding any time is an issue, but even more of an issue is training at the right time. We found just-in-time training to be most effective, but it's difficult getting people out to classes," said Wendy Rabekoff, a manager of project automation services at Fluor Daniel, Inc., a multibillion architectural, construction and engineering company in Irvine, Calif.

Keys to a successful IS training plan

- Allocate appropriate financial and human resources
- Allot enough training days
- Focus training on employees' direct work role
- Include interpersonal skills in curriculum
- Alternate teaching and project work
- Provide sufficient time for experimentation

Source: International Data Corp., Framingham, Mass.

To help solve the problem, Fluor Daniel set up an on-site learning center and put various training materials online, so staffers don't have to travel and can squeeze in training between projects.

Still, IS professionals involved in leading-edge technologies also need to spend 5% to 10% of their time at off-site training sessions to keep up with the technology, Rabekoff said.

"Anything produced on CD or online would already be out of date," she said.

At $5 billion Carrier Corp. in Syracuse, N.Y., training is so critical that contractors are brought in to cover for IS staffers who are attending off-site classes.

"The important thing is planning for it, rather than reacting to it," said Bob Moran, director of IS at Carrier.

So Carrier designs a professional development plan for each IS employee, then integrates those plans with the company's overall 18-month business plan.

"Usually, your peers end up picking up the work you'd be doing if you weren't in training class," said Darrell Ferris, a senior manager of virtual reality applications at Nortel, Inc. in Richardson, Texas. He said the company is solving the problem by delivering more training courses via CD-ROMs and the company's intranets.

Oracle7
One Database, All Computers

100% of Fortune 500 companies run their business on multiple server operating systems. Why would you choose a database that doesn't?

Operating Systems	Oracle7	Microsoft SQL Server
NT	☑	☑
HP-UX	☑	☐
Sun Solaris	☑	☐
NetWare	☑	☐
IBM AIX	☑	☐
IBM/MVS	☑	☐
OS/2	☑	☐
Digital OpenVMS	☑	☐
Sequent DYNIX/ptx	☑	☐

On average, Fortune 500 companies support 8 server operating systems.* Does it make sense to choose a database that locks you into one operating system? Oracle7, which today supports more than 90 different operating systems, gives you the choice to run your business on whatever system meets your needs.

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Informix gets object-enabled jump on Oracle

By Craig Stedman

INFOSMIS SOFTWASE, INC. will introduce s relational/object database next week, giving the company a jump on Oracle Corp. in providing users with one platform for building multimedia Internet applications.

Informix will ship its Universal Server in December with support for Sun Microsystems, Inc.'s Solaris operating system, sources said. The software combines Informix's relational engine with the Illustra object database technology it bought in late 1995, enabling users to add images, video, audio and other complex data types to their applications.

In the first quarter of next year, Informix will ship s Universal Server version of new middleware that links Web browsers to its databases. Meanwhile, the object-enabled Oracle8 software that Oracle CEO Larry Ellison first promised in 1993 still won't be ready for general release until next summer, according to Oracle officials.

The -Universal Server announcement at DB/Expo '96 in New York will put Informix in the same category as IBM, which added multimedia extenders to its DB2 database last spring. However, analysts said Illustra's user base — and plug-in deals that Informix has signed with more than 100 third-party vendors — will give Universal Server a big advantage over DB2 off the bat.

MIGRATION PLANS

CitySearch, Inc. is one Illustra customer that plans to migrate to Universal Server early next year, once Informix adds support for the Silicon Graphics, Inc. systems that it uses, said Jeffrey Brewer, vice president of technology at the Pasadena, Calif., company.

CitySearch considered Oracle as the database for its Web guide to local communities, but it chose Illustra and sees no reason to change horses now, Brewer said. "Oracle is going to provide the same functionality, but we can't afford to wait, snd Informix is here first."

Universal Server can run parallel queries, hopefully speeding up CitySearch's Web site, Brewer said. Informix will also provide better administration tools than Illustra did, "so we can keep the database running on a daily basis without having to get down into the guts of it," he said. "Illustra was very much cutting-edge technology, and that has its downsides."

Oracle supports multimedia dats in its own Universal Server, which was announced earlier this year. But that is a package of separate database engines and "is more of a name than a reality," said Dan Kusnetzky, an analyst st International Data Corp. in Framingham, Mass.

Oracle8, which combines the pieces into s single product, went into beta testing last summer before Informix's Universal Server (see chart). "We could have done a three-month beta or whatever, but we chose to make sure it's something that is well-tested," said Praful Shah, senior director of server technologies marketing at Oracle.

The wait shouldn't cause Oracle many problems with existing users, said Evan Bauer, an analyst st Giga Information Group in Cambridge, Mass. "But it does mean that Oracle will be playing catch-up all the way through 1997" on support for Web applications, he added.

Oracle8 vs. ...

- 1993: Oracle CEO Larry Ellison reveals plans for Oracle8
- August 1996: Oracle8 begins limited beta-testing
- November 1996: Oracle demos Oracle8 at user conference, sets ship date for mid-1997

Informix's Universal Server

- December 1995: Informix agrees to buy Illustra object database
- September 1996: Universal Server is released in beta
- December 1996: Informix plans initial shipments of Universal Server

IBM does a DB2 redid

IBM also plans to announce a database at DB/Expo, though its DBs Universal Database is just starting beta testing and isn't scheduled to ship until the middle of next year.

IBM officials last week said Universal Database melds the regular and parallel versions of DBs for Unix, Windows NT and OS/2 into one code base.

Like other database vendors, IBM until now has sold its parallel software separately. The combination will let users run parallel queries on symmetrical multiprocessors.

Universal Database also will include configuration wizards, basic decision-support capabilities and IBM's upcoming Net.Data software.

Industry watchers said the database should put IBM on a solid technical footing for competing against the likes of Oracle and Informix.

But IBM still has a lot of ground to make up with users, they added. DBs "never comes up when we ask Fortune 1,000 companies which [client/server] database is strategic," said Stan Dolberg, an analyst at Forrester Research, Inc. in Cambridge, Mass. — Craig Stedman

S H O R T S

Free year 2000 class

The Association of Information Technology Professionals is sponsoring s conference Dec. 6-7 in New York on the year 2000 programming dilemma. The conference is free to snyone who registers before Dec. 1 by calling (847) 825-8124. Seating is limited to the first 204 registrants.

SAIC to buy Bellcore for $500M

Systems contractor Science Applications International Corp. (SAIC) last week said it will buy Bell Communications Research, Inc. (Bellcore), the research arm of the regional Bell operating companies, for about $500 million. Bellcore's board of directors early last year said they were considering selling the company as a result of changes in the telecommunications industry.

Formed in 1984, Bellcore had revenue of more then $1 billion last year. San Diego-based systems contractor SAIC posted revenue of $2.2 billion last year. The deal is expected to be completed late next year, pending regulatory approval.

Compaq settles lawsuit

Compaq Computer Corp. last week settled a lawsuit with 22 states over the practice of shipping PC boxes to dealers to replace damaged boxes. The states claimed this tempted some PC dealers to disguise used PCs in new packaging. Although the company admitted no wrongdoing, Houston-based Compaq agreed to pay $132,000 to cover investigators' costs and provide dealers with unmarked replacement boxes in the future.

Internet banking on the rise

The number of banks that offer Internet banking services is expected to jump fivefold next year, according to s poll by Datapro Information Services Group in Delran, N.J. In the study, "Banking Technology Issues: 1996 International Survey," 36% of respondents said they expect to offer Internet banking services next year, up from 7% this year. The survey was based on responses from 659 banks worldwide.

Wolfpack APIs released

Microsoft Corp. last week released the application programming interface specifications for its Wolfpack server clustering software. Wolfpack, s service pack for Windows NT 4.0, is due early next year on several hardware platforms, including Compaq Computer Corp., NCR Corp. snd Digital Equipment Corp. The initial version will support fail-safe operations between two servers.

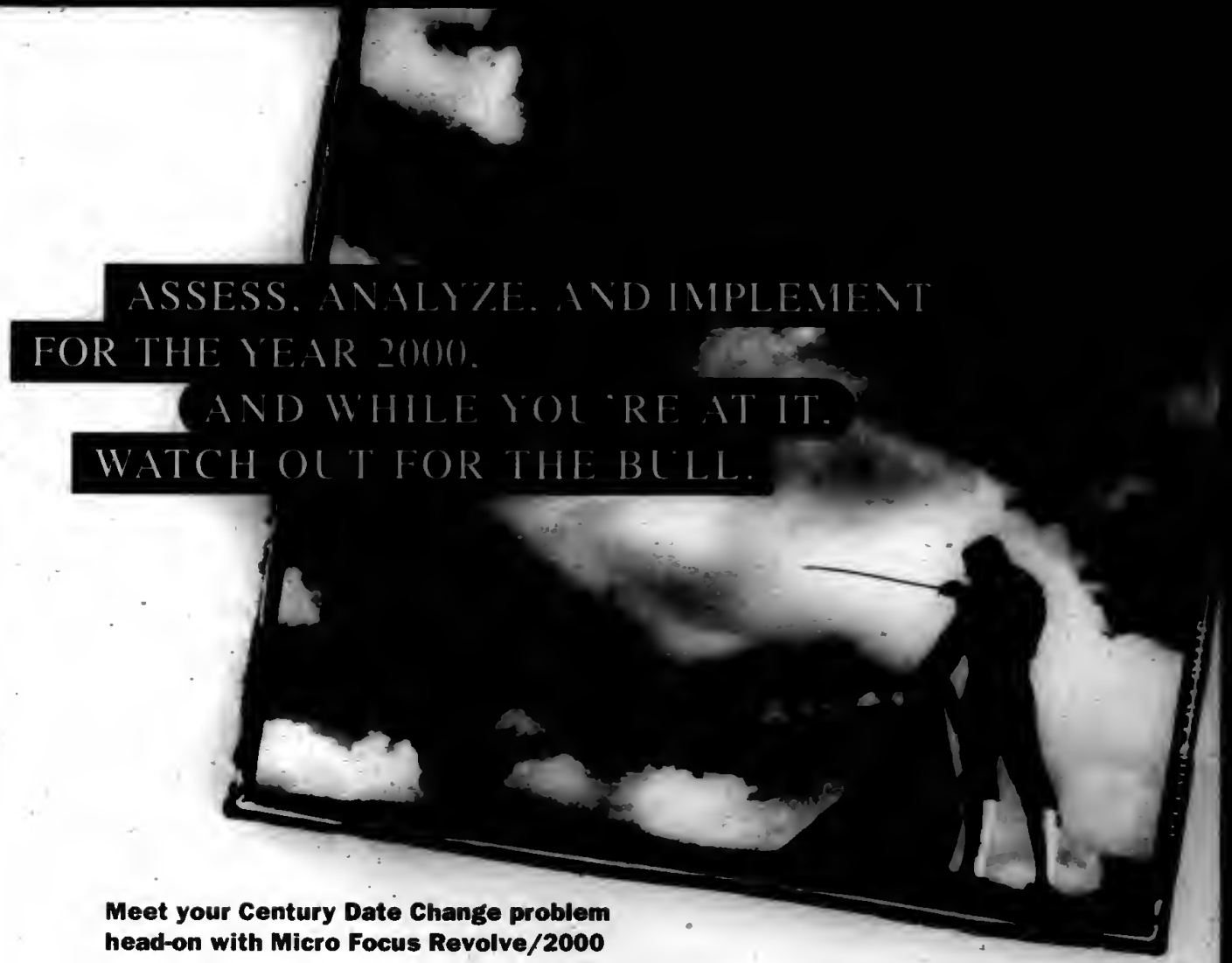
Ford in outsourcing pact

Ford Motor Co. has signed s three-year, $42 million systems integration contract with Logica, Inc. in Lexington, Mass., to manage its information technology suppliers in the U.K. The deal is part of Ford's effort to cut costs by reducing its number of information technology suppliers.

Drive maker files suit

Database Excelleration Systems, Inc. (DES) has filed a patent infringement suit against Imperial Technology, Inc. The Santa Clara, Calif.-based company claims Imperial sold solid-state disk drives that use technology for which DES holds U.S. patents. DES is seeking damages and an injunction to restrain Imperial from further sales. Imperial, based in El Segundo, Calif., said it and other companies have been making solid-state disk drives for 16 years, well before DES obtained patents for the same technology.

SHORT TAKES The Gigabit Ethernet Alliance, with 86 vendors as members, last week announced that the Institute of Electrical snd Electronics Engineers, Inc., a standards-setting body, has adopted s core set of proposals as the basis for writing the first draft of the specification for the emerging technology.... Max Hopper, the former chief information officer at American Airlines, and Ethernet inventor Bob Metcalfe will be inducted into the IT Hall of Fame in January. Hopper, who oversaw development of the Sabre reservation system, is the first information systems executive to be inducted into the Hall.... Hewlett-Packard Co. last week announced plans to outsource most of its Unix workstation manufacturing operations done in Exeter, N.H., and Fort Collins, Colo.



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A lot of software vendors are charging into the market with Year 2000 "solutions," but look closely—you'll find many are proprietary, incomplete, or make claims you know are too good to be true. With our experience, we know better. Micro Focus Revolve/2000, gives you tangible, comprehensive technology in a single package that lowers your risk and addresses every step in the process.



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Transforming Enterprise Systems **MICRO FOCUS®**

CNA, CSC stake claim for business outsourcing

By Thomas Hoffman

LAST WEEK, an insurance giant took out a giant insurance policy.

CNA Financial Corp. joined with a Computer Sciences Corp. (CSC) subsidiary to form an outsourcing venture. The business will handle claims processing, record-keeping and other back-office functions for life insurers and financial services firms that are just getting into providing life insurance.

The back-office services could be a boon for traditional life insurers that seek to cut costs. Or the services might come in handy for insurers that want to shift their internal development on front-end applications to recapture investors who have flocked to mutual fund giants such as Charles Schwab & Co.

CNA's timing is impeccable. Comptroller of the Currency Eugene Ludwig last week introduced rules that will let banks, on a case-by-case basis, dramatically expand the amount of insurance they are allowed to underwrite. For banks with little-to-no back-office infrastructure for life products, a business process service could be cheaper than building a back office from the ground up.

The worldwide business process outsourcing market is expected to grow from $138 billion this year to $337 billion by 2001, said Christian Meyers, an analyst at G2 Research, Inc. in Mountain View, Calif. One-third of the market is composed of financial and administrative process outsourcing, which includes claims processing, Meyers said.



CNA's David Wroe

Joint outsourcing venture will cut back-office costs by 30% to 50%

"Insurance companies are outsourcing stuff right and left, so why not business processes?" asked Jean C. Gora, research manager at the Life Office Management Association, an Atlanta-based educational union of 800 financial services companies.

The as-yet unnamed venture will operate out of Nashville beginning in February. The group hopes to make a compelling argument for its services by offering to reduce insurers' back-office costs by as much as 30% to 50%, said David Wroe, chief technology officer at CNA.

Those cost-savings will be achieved partly through CSC Continuum, Inc.'s critical mass — it has 1,000 staffers who serve 23 life insurers with 2 million policies. CSC Continuum clients include Munich, Germany-based Allianz AG Holding's North American operations and Baltimore-based USF&G Corp.'s F&G Life insurance unit, said W. Michael Long, group president of CSC Continuum's insurance and banking group.

Wroe said the difference between its venture and other business process outsourcing vendors — such as Andersen Consulting and Price Waterhouse — is CSC's object-oriented application software. Wroe said the software was designed to improve service levels and drive down costs through its reusability and functionality.

Despite their combined clout — $60 billion in assets — CNA and CSC face a tough sell with at least one insurance industry executive. "If an insurance company is incurring high back-office expenses or is having trouble running those functions, then a service like this might make sense," said Peter Daboul, senior vice president of information systems at Mass Mutual/The Blue Chip Co. in Springfield, Mass. But the trouble with outsourcing, Daboul said, "is that you give up control of a business operation, and that's risky."

Flexibility is mandate for companies looking to outsource. Page 69

"I have better ways for my staff to spend their time than keeping our network up and running ...that's NETSOLVE'S job."



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Bay Networks targets telcos, Internet service providers

By Patrick Dryden

BEERING TO ASVAAAA its waning status in enterprise internetworking, Bay Networks, Inc. will attack the service provider market this week with a management suite that handles large and diverse networks.

OptivityServices combines Bay's network management software with tools from five new partners. The suite customizes the mix specifically for telecommunications carriers, Internet service providers and cable television operators.

The move opens the Santa Clara, Calif., company's Optivity Enterprise platform, scales its scope and closely couples network management with business functions such as billing and performance modeling.

Service providers could better address the needs of corporate customers that want to unload the costly and complex maintenance of intranets, Internet links and remote access, said John Morency, a principal at The Registry, Inc. in Newton, Mass.

Just as internal administrators fight to integrate the tools they need, "the outsourcing folks need help to build a centralized platform to manage the networks that exceed 10,000 oodes," Morency said.

Concentric Network Corp. adopted OptivityServices over "a plethora of options out there" for two reasons: better flexibility in partitioning its network to individual customers' needs and a single point of support, said Matthew Bross, vice president of operations at the service provider in Cupertino, Calif.

Bay's OptivityServices suite integrates network management software and tools from five new partners.

"We probably could have assembled the same set of capabilities through someone else, but Bay has groomed all these tools into one service offering," Bross said. "Now I can deal just with Bay to manage multiple vendor relationships."

OptivityServices simplifies the monitoring and reporting of each customer's portion of the Concentric network, Bross said. He can tailor the management of private networks and deliver performance reports easily instead of "extracting all the information from a variety of databases ourselves," he said.

But Bross said OptivityServices lacks tools that would let his customers adjust the network resources to which they subscribe. For example, they can't change the bandwidth allocated among regional offices through frame-relay circuits.

Bay's Internet/telecommunications business unit is "strategic" to the firm's future, Morency said. "The 'O' word — whether it's outsource or outtask — is becoming less distasteful in corporate boardrooms today," he said.

Cabletron Systems, Inc. recently worked with service providers to adapt similar support for its Spectrum network management platform. But Cabletron lacks the depth of tools and consulting services of Bay's OptivityServices, Morency said.

Network vendors respond to request for shared, switched LANs to coexist

By Bob Wallace

ALTHOUGH LAN SWITCHING has been in the technology spotlight for two years, most users still use regular Ethernet or Token Ring LANs and are clamoring for offerings that let shared and switched LANs coexist.

The industry is responding. 3Com Corp. in January will unveil the Ethernet Backplane SwitchModule that lets users on shared Ethernets communicate with their brethren on switched LANs without special cabling, *Computerworld* has learned.

Devices such as this and others on the market from Cabletron Systems, Inc. and Cisco Systems, Inc. "let users who want to deploy switching widely migrate their shared LAN users to switched LANs without disruption," said Skip MacAskill, an analyst at Gartner Group, Inc. in Stamford, Conn.

Most workers use low-bandwidth office applications and access the LAN only to send electronic mail, print and back up files. But users have implemented switching to give fatter pipes to servers, power workgroups and World Wide Web surfers.

ALIVE & WELL

Worldwide shipments of shared Ethernet hubs

1995	40.55M
1996	53.31M*
1997	65.81M*
1998	71.57M*
1999	77.54M*

*Projected

Source: Dell'Oro Group, Portola Valley, Calif.

"We have scores of users who stay local for a majority of their work and don't access applications from servers, which keeps LAN utilization at 2% to 3% of the capacity of regular LANs," said Barry Gillespie, network services coordinator at St. Jude's Children's Hospital in Nashville. "But we also have power users that need switched bandwidth for DNA-sequencing applications and crunching of biological statistics."

The former don't need switching, but the latter can't do without it, Gillespie said. "We're looking to the new 3Com module to let the two groups communicate for the first time."

COMPLEX NETS

Users in his situation have had to create special networks to link the two groups. That makes the resulting networks difficult to administer.

"We're working on migrating about 600 users on shared LANs to switched LANs but want to make sure that during the transition they all have access to a wider variety of resources, such as servers, on the switched LANs," said Mile Pyle, a senior computer engineer at Boston Edison Co., a utility in Boston. "Users on shared LANs may need access to our servers, which are almost entirely connected to switched ports."

With the $11,495 module for the 3Com ONcore hub, users on up to eight LAN segments can talk to users attached to any of 16 switched Ethernet ports.

Cisco preps system to boost 'net performance. Page 59

HP software improves network monitoring

▸ *Vendor's NetMetrix to track network availability, response times*

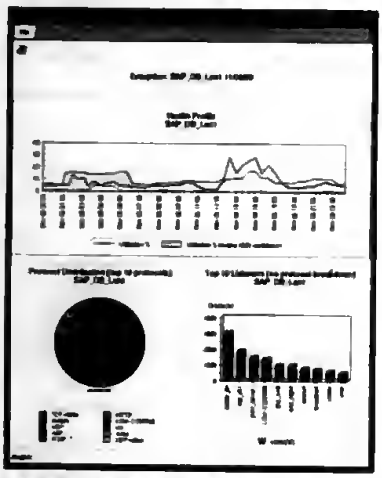
By Patrick Dryden

HEWLETT-PACKARD CO. this week will enhance its NetMetrix network monitoring software with enterprisewide reporting features and browser access.

NetMetrix will let managers track network availability and response times for users. The software also will let managers more quickly focus on problems through broader monitoring and exception reports.

And they can do all this from a browser instead of a Unix console that runs HP's OpenView management platform.

Managers who use the current version of NetMetrix said they lack a high-level view of network performance with automation capabilities to help maintain sprawling client/server networks.



Exception reports correlate network measurements to reveal conditions and usage profiles

"Now we can view across the enterprise instead of looking at reports for 180 different Ethernet segments," said beta-tester Tom Reinsel, a network design and management analyst at Eli Lilly and Co. in Indianapolis.

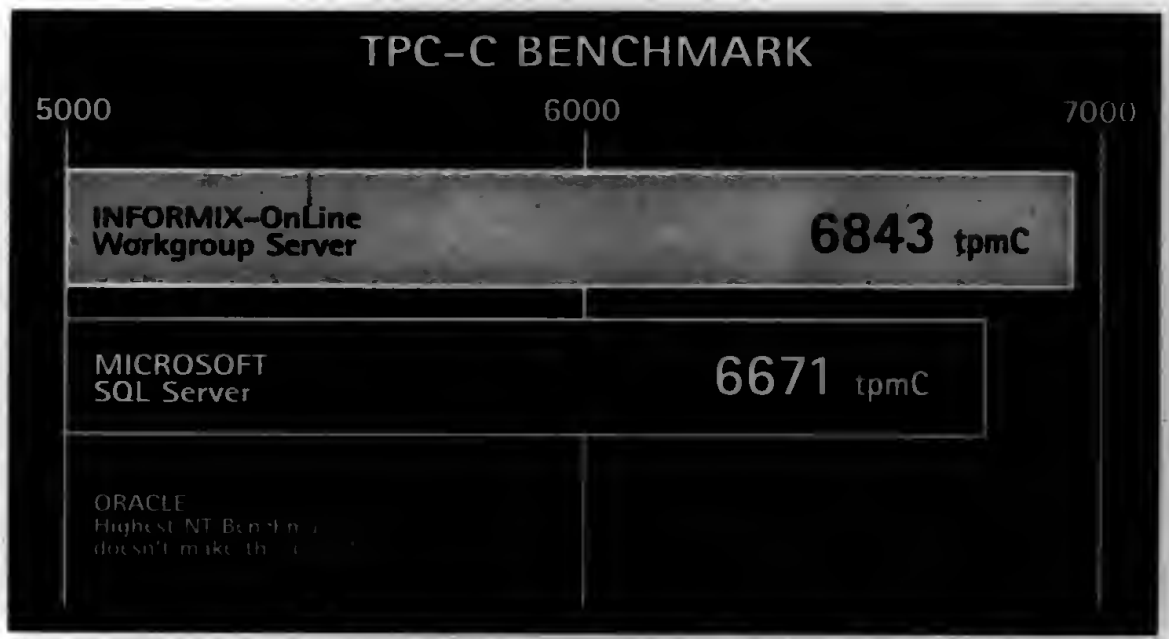
The global pharmaceutical firm's operations staff had to compile reports about each network, push that information into a spreadsheet and print it for distribution, Reinsel said. The new version correlates that data, Reinsel said, and then sends it via intranet to more than 60 remote managers. Smaller networks also will benefit from the enhanced NetMetrix, which is due to ship next month.

NASA Ames Research Center may have only 400 workstations on its Ethernet and high-speed LANs, but the new exception reporting capability "will save me a lot of time," said Kevin Lahey, a network engineer at the supercomputer site in Moffett Field, Calif. Lahey said he looks forward to having "a quick way to get notified about performance changes instead of paging through the NetMetrix data to identify a problem myself."

Both managers said the new availability and response-time reports should give them early warning about problems that users may not recognize.

NetMetrix Enterprise Manager, which combines the internetwork response manager with the Web-based reporter, costs $20,995.

Introducing the new record holder in database performance on an NT Server.



TPC-C benchmark results based on client/server application performance on a Compaq ProLiant 5000/6/200 Model 2 running Microsoft Windows NT Server 4.0 *Oracle benchmark based on Windows NT 3.51 on Compaq ProLiant 4500/133 Model 2c/s. Informix OnLine 7.3 $100/tpmC available 2/1/97 Microsoft SQL Server $90/tpmC available 12/1/96. Oracle 7.3 $198/tpmC available 6/30/96

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And for all that power, it's still easy to install, easy to configure, easy to use, and easy to administer. Not to mention easy to afford. And since it's built on Informix's exclusive Dynamic Scalable Architecture™, it can grow to accomodate any size department.

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On the road again

▸ *Help is on the way for mobile warriors*

By Mindy Blodgett

AS AIRLINES ADD electrical outlets for in-flight laptop users and hotels include features such as high-speed Internet access in guest rooms, 1996 has turned into the year of the business traveler.

Although users said they welcomed improved conditions for road warriors, they said business travel is still an obstacle course. And instead of fancy "cybersuites," they have a need for very simple solutions.

Users said easy-access data ports and extra electrical outlets and phone connections make working from a hotel room much easier. And well-lit and conveniently placed desks and ergonomic chairs are a bonus.

"As for user-friendly hotel rooms, my users have come to expect modem connection capability as a given," said Doug Moran, an information systems analyst at CRSS Constructors, Inc. in Denver.

Users are beefing up their notebooks with multifunction PC cards to take advantage of the stronger connections now available in some hotel rooms.

To aid users on the road, Moran configures all notebooks with Xircom, Inc.'s XPS Ethernet/Modem Combo PC cards to make installation and support easier and boost connectivity.

Tim Cooper, director of IS at DuCharme McMillen and Associates in Fort Wayne, Ind., complained that PC cards "are always breaking." But he said the current trend toward internal modems in laptops worries him more. "What do you do when a modem stops working inside the laptop?" Cooper asked. "I shudder to think."

ITEMS USUALLY BROUGHT ON THE ROAD

Laptop	58%
Personal photo	49%
Cellular phone	44%
Pager	25%
Printers or fax machines	14%
Religious item	10%
Stuffed animal	7%

Source: O. K. Shiffler & Associates, McLean, Va., for the Marriott hotel chain

TO THE RESCUE

Recent announcements for travelers include the following:

- American Airlines said it would add outlets to provide 12-volt DC power to planes that fly some international flights, permitting almost continuous in-flight computer use and easing concerns about laptop battery life. American said next month, it will start retrofitting planes with the ports.
- Atcom/Info, a software firm in San Diego, has created "cyberbooths" in which travelers can access their electronic mail or the Internet. The kiosks are turning up at airports, convention centers and hotel lobbies.
- Fourth Communications Network in San Jose, Calif., has released a "traveler browser" that lets users browse the World Wide Web using either televisions or PCs in hotel rooms.

IBM reassures users with Java for Warp

By Laura DiDio

IBM INTERRUPTED its Toga Party at last week's Comdex/Fall '96 long enough to assure users that OS/2 Warp has a future and to introduce the beta version of its Java Virtual Machine for OS/2 Warp 4.

The software will enable businesses that run the operating system to run Java applets, instantly making many more applications available for the platform. The commercial version is slated to ship next month.

The availability of the Java 1.0.2 release for OS/2 Warp 4 marks the beginning of "an extensive Java rollout for the operating system and one that will continue through mid-1997," said Donn Atkins, vice president of marketing at IBM's Personal Software Products group (see chart).

OPEN ARMS

Six users interviewed by *Computerworld* said support for the Java Virtual Machine will help OS/2 Warp loyalists stick with the beleaguered operating system because Java-based applications are platform-independent.

"It's great news for us, since we and many of our customers are all developing Java-based applications. It will make communications with our customers a lot easier," said Bill Teags, information systems manager at Advanced Package Engineering in Phoenix.

Teags said he has already "dabbled" with the OS/2 Warp 4 Java beta, and it was "robust and easy to use."

Michael Haun, president of Bell-Haun Systems, Inc., a telephone installation company in Westerville, Ohio, also praised the product. "We're excited. IBM's quick support of Java will give OS/2 Warp a shot in the arm. No more worrying about how many developers are writing for the platform," Haun said.

STILL ON TRACK

In related news, IBM executives said that despite rumors to the contrary, the company isn't abandoning development of either OS/2 Warp or OS/2 Warp Server.

"There will be an OS/2 Warp and OS/2 Warp Server 5. We will ship a major new version of both the OS/2 Warp client and Server in 1998," said John Albee, program manager for OS/2.

IBM executives earlier this year raised concern about the future of the operating system when they announced that future upgrades would come in the form of a series of service pack upgrade packages rather than an entirely new operating system kernel.

Users said the IBM announcements were encouraging.

"Our confidence was shaken by IBM's lack of marketing and support. My biggest concern was how could we continue to be stalwart supporters if IBM itself wasn't committed to the OS/2 Warp platform. Now it looks like they're at least trying to get back on track," Teags said.

IBM'S JAVA SUPPORT ON OS/2 WARP

December	Netscape Navigator for OS/2 Warp 4
	Just-in-Time Compiler 2.0 for Java 1.0.2
January 1997	Java 1.0.2 for OS/2 Warp 4
Q1 1997	Warp 3 and Warp Connect support for Java 1.0.2
First half 1997	OS/2 Warp Server 4; Warp Server SMP support for Java 1.0

"These announcements give us renewed confidence that OS/2 Warp won't follow the dodo bird to extinction." – Bill Teags, Advanced Package Engineering

U.S. moves to ax billions in tech tariffs

By Gary H. Anthes

WASHINGTON

THE CLINTON administration is putting on a full-court press to strike a multilateral deal that would sweep away billions of dollars of tariffs on computer products.

If the effort succeeds, it will result in lower prices for software, computers, semiconductors and telecommunications gear, particularly for buyers overseas.

An agreement to end those tariffs by 2000 was to have been discussed Friday at Subic Bay in the Philippines at the 18-member Asia-Pacific Economic Cooperation (APEC) meeting. And it is scheduled to be considered again next month when the APEC group meets in Singapore with the 100-nation World Trade Organization (WTO).

A spokeswoman for the Semiconductor Industry Association said there is no chance that all 100 WTO countries will sign the agreement any time soon. However, she said the industry hopes the APEC countries, Canada and the European Union will sign it by year's end.

"Tariffs are a tax on the users of PCs and other electronic devices," said Michael Maibach, vice president of government affairs at Intel Corp. "Our goal is to lower and eventually eliminate that taxation worldwide, and open up some markets in the bargain."

Intel has joined 41 other companies and 13 trade associations to form a lobbying group called the Information Technology Agreement Coalition.

Its goal is to eliminate tariffs on all information technology products by 2000, said Greg Garcia, manager of international trade affairs at the American Electronics Association in Washington.

According to Garcia, some $77 billion in U.S. information technology exports is subject to tariffs that total at least $4 billion per year.

CURRENT IMPORT DUTIES*

	U.S.	Western Europe	Japan
Computers	0% to 3.9%	3.5%	0% to 2.9%
Computer peripherals	0% to 2.2%	2%	0% to 3.6%
Semiconductors	0%	7%	0%

*Based on value of items

Source: American Electronics Association, Washington

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Apple still chasing enterprise ties

▶ *Seeks IS manager to foster better link with users*

By Lisa Picarille

ONE OF THOSE VOCAL Macintosh IS managers who perpetually claims that Apple Computer, Inc. only pays lip service to big business customers will have the opportunity to put his mouth where Apple's money is.

The Cupertino, Calif., computer maker plans to hire an information systems manager from a large Macintosh site to help Apple better understand the needs of the enterprise market. According to Marco Landi, Apple's chief operating officer, large corporate customers account for 45% of Apple's overall revenue. This makes it the largest and most lucrative segment of Apple's business.

By January, Apple's goal is to have an IS manager as a liaison to other large Macintosh sites and funnel feedback to Apple's executive staff, Landi said.

In addition, each member of Apple's senior executive staff — Chief Administrative Officer George Scalise, Chief Technology Officer Ellen Hancock, Chief Financial Officer Fred Anderson and Landi — have been ordered to meet regularly with three to four of Apple's biggest corporate customers.



During a briefing at Comdex/Fall '96 last week, Hancock said Apple for a long time has been "living in its own reality distortion field" and that management needs to focus on "the customer and not the technology." She also said Apple's new attitude "was a departure in the enterprise."

These moves are the latest in a series designed to step up Apple's commitment to the enterprise. Apple in July formed its Enterprise unit to deliver products, support and programs aimed specifically at the needs of big corporate users.

TIES THAT BIND

In the past few months, Apple has announced wide-ranging partnerships and technology alliances with IBM, Netscape Communications Corp., Sun Microsystems, Inc. and Oracle Corp.

Those deals focus on Apple's adoption of de facto standards and codevelopment projects designed to improve the interoperability of Apple's platform. Apple hopes this will make the Macintosh a "good corporate citizen" and thus appealing to IS managers.

For years the corporate world has chided Apple for devoting more time to the education and consumer markets and developing "cool" technology that isn't practical to business users.

Macintosh managers previously have had very few ways to get their concerns heard by Apple. MacIS, a now-defunct association of more than 300 Macintosh IS types, was one way to draw up formal requests, annual wish lists and voice opinions. But even Landi admits that MacIS' influence was limited because there was no real "receiver" within Apple to act on the group's behalf.

Apple intends to proactively seek the advice of IS professionals, not just deliver what it thinks the enterprise needs.

One user said Apple's move is a big step in the right direction but encouraged Apple to go one step further.

"I'm coming from the health care perspective. While I can learn generic things from IS managers in other areas of industry, I would like to see Apple address specific vertical markets," said Stephen Priest, director of hospital information services at Dartmouth Hitchcock Medical Center in Lebanon, N.H., which has more than 3,000 Macintoshes.

This is not the first time Apple's new management regime has used the strategy of hiring a sympathetic outsider. In February, Apple Chairman and CEO Gilbert Amelio hired Macintosh software industry veteran Heidi Roizen to head Apple's Developer Relations group.

She has since more than doubled that unit's budget to $40 million.

Netscape now part of auto-update crowd

By Kim S. Nash and Justin Hibbard

NETSCAPE Communications Corp. last week joined a crowd of software makers that offer "push" products, which disseminate information to users automatically.

Netscape's product, a client software package code-named Constellation, was designed to send predefined Internet, intranet and traditional corporate data to users. The goal is to save workers from having to search the World Wide Web or internal servers for routine information.

Constellation, which is due in the middle of next year, will use "netcasting" technologies from PointCast, Inc. in Cupertino, Calif., and Marimba, Inc., a start-up in Palo Alto, Calif.

Netscape officials at Comdex/Fall '96 last week in Las Vegas said Constellation will save information systems managers time and money because it will allow more applications and data to be administered from central servers. And end users will be able to run Constellation on low-cost network computers, officials said.

Netscape isn't the first vendor to venture into push products (CW, Sept. 9). But the Mountain View, Calif., firm is likely to have an easier time making Constellation a success because the module rides the long coattails of Netscape's popular Navigator Web browser, observers said.

Some Netscape users have already built push capabilities on their own.

Programmers at Sandia National Laboratories created homegrown subscription services for many of the 120,000 documents on Sandia's intranet.

About half of Sandia's 8,000 intranet users subscribe to an online weekly bulletin about company events and other internal publications. Users get an electronic-mail message with the address of the latest issue or the document itself.

Netscape also promised a tool to let Web developers convert sites to ones that can be "netcast" to Constellation users.

"Our site is so large that a map of it would be impossible for users to read," said Fran Current, Internet technologies project leader at the lab. "We very much look forward to" products that push automatically, he said.

Constellation is a response to Microsoft Corp.'s Active Desktop, a push feature in its forthcoming Internet Explorer 4.0 Web browser, said David Readerman, an analyst at Montgomery Securities, Inc., a brokerage in San Francisco.

With either the Microsoft or Netscape technologies, end users will have one desktop interface to handle Internet, intranet and traditional corporate information and applications. Microsoft's interface is able to steal navigation methods from browsers, such as hypertext links and "back" and "forward" buttons.



Desktop costs

CONTINUED FROM PAGE 1

or fully configured PCs, computer companies talked up their plans to reduce the cost of ownership for desktop systems.

Network computers also caught the attention of many information systems managers, who said that despite worries about network overload, they are willing to give the diskless devices a shot.

The giant PC show offered many their first look at devices such as IBM's Network Station, Network Computing Devices' Universal Network Computer and Wyse Technology, Inc.'s latest Winterm, Model 4000.

Network computers were designed to give users access to applications and data stored on a centrally managed server or mainframe. The devices offer hope that IS managers can reduce support and administration costs for large numbers of desktop users.

"I don't know everything there is to know about [network computers], but I'm very intrigued by them because what we spend on PC upgrades and maintenance is unbelievable," said Michael Haun, president of Bell-Haun Systems, Inc. in Westerville, Ohio. Bell-Haun maintains telephone systems.

NO PROBLEM

Robert Tunney, a systems analyst at Lockheed Martin Corp. in Bethesda, Md., said his company is waiting for network computer hardware to come along and that buy-off from upper management isn't an issue. "It won't be difficult at all as long as they work," he said.

IBM showed off its Network Station, which comes with IBM's LAN Control Client Manager for remote management. The prototype was built to the Network Computer Reference Platform specification supported by IBM, Sun Microsystems, Inc., Oracle Corp. and others.

Microsoft Corp.'s competitive response to the rival network computer also garnered its share of supporters. In a session hosted by Bear Stearns & Co., Jim McDonnell, Hewlett-Packard Co.'s worldwide marketing manager, outlined his company's commitment to Microsoft's NetPC, a bare-bones system that runs Windows.

"We believe the NetPC, which we're working on as we speak with Microsoft, will really get at this whole notion of total cost of ownership," McDonnell said.

The network computer also turned up as a topic in a panel that included executives from SunSoft, Inc., Oracle, IBM and Microsoft. Guy "Bud" Tribble, vice president of object products at SunSoft, disputed the idea that network computers are a throwback to dumb terminals.

"Dumb terminals and mainframes load the server down too much," Tribble said. But network computers that run Sun's Java Internet programming language "take central management from the mainframe world and local processing power from the PC world and put them together."

But speakers at International Data Corp.'s (IDC) session on network appliances threw cold water on the hype about network computers. IDC analyst Bruce Stephen said network computers will succeed mainly as terminal replacements in the commercial market.

The network computer "is piggybacking on the coattails of terminal migration," Stephen said. "It's also good for lightweight PC users."

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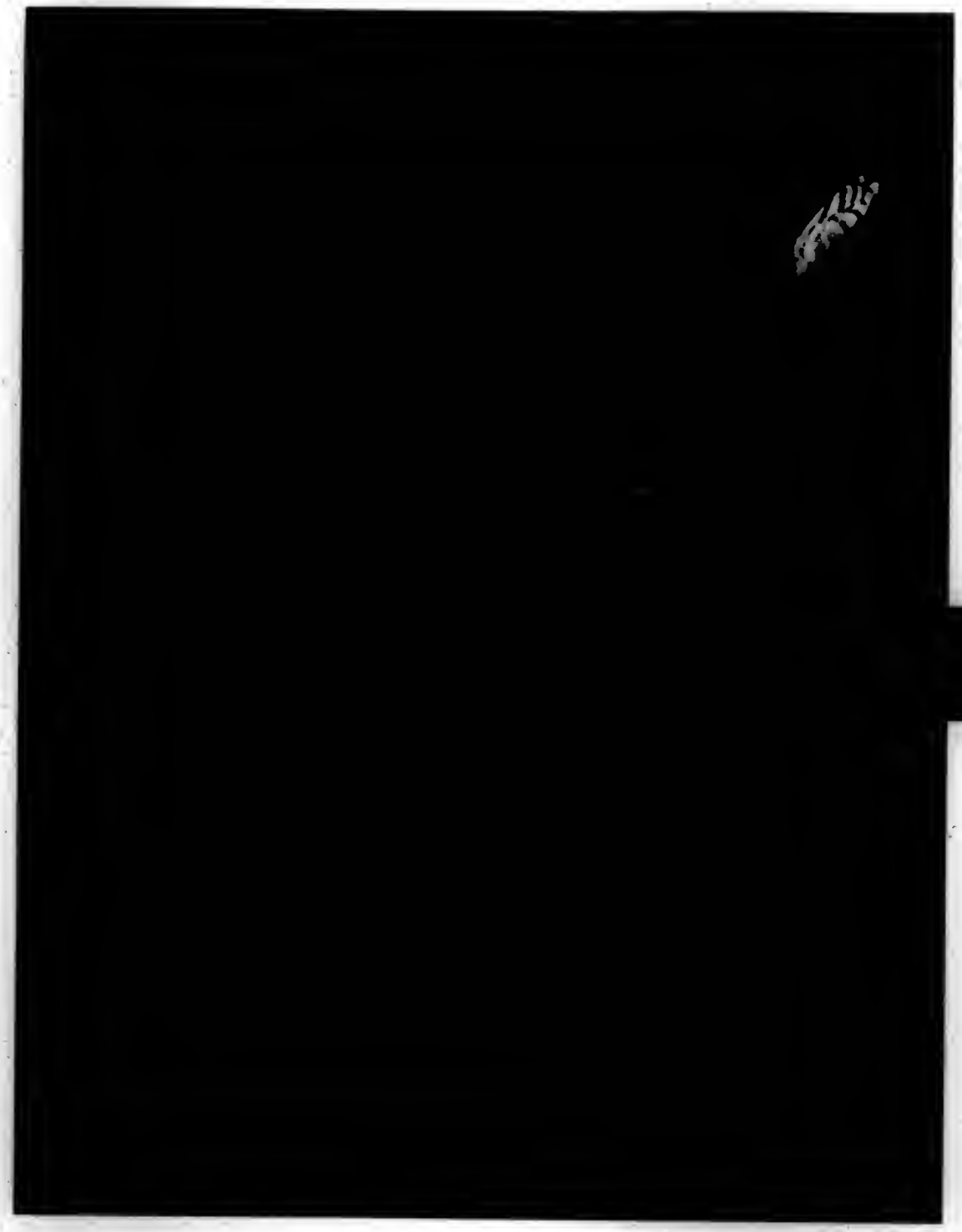
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Has It Changed Your Life Yet?

AS/400 users win remote access support

By Tim Ouellette

AS/400 SHOPS carry enough clout to merit a remote access server built specifically for them.

Perle Systems Ltd. next month will ship Perle 400/RAS, an eight-port, dial-up remote access server that lets users access AS/400s along with PC LAN servers.

Previously, users such as Donna Olsen, an advanced systems engineer at Thyssen Steel Group in Detroit, used asynchronous remote controllers and modems to have users dial in to the AS/400 only.

Toronto-based Perle's 400/RAS supports AS/400 networking, addressing and emulation features that other leading LAN-based remote access servers from Shiva Corp. or Ascend Communications, Inc. don't address.

That's enough to persuade one Detroit firm to move from a Shiva remote access server to the Perle product to gain these AS/400-specific benefits, said a systems manager who requested anonymity.

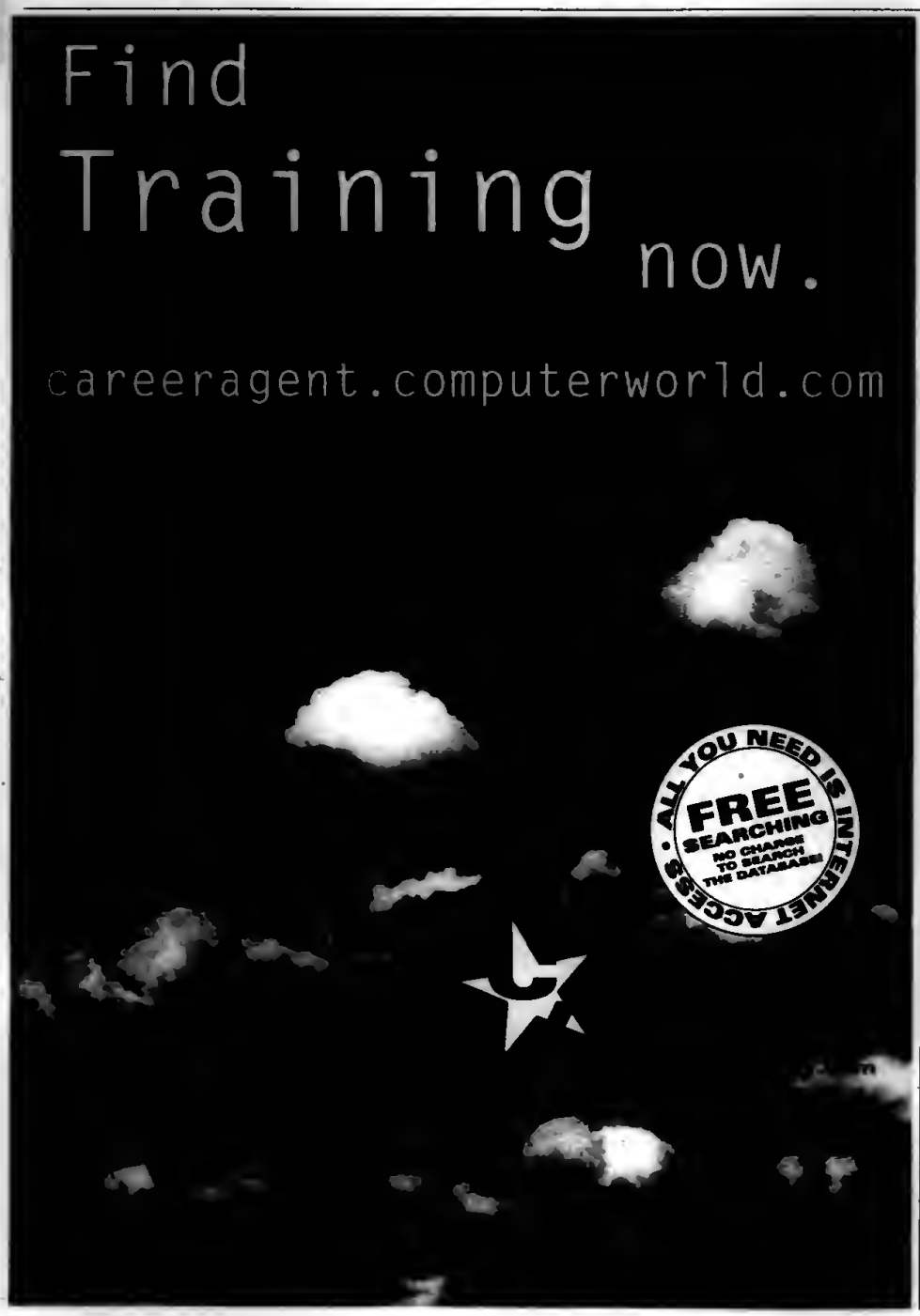
For example, when a PC attaches to the AS/400, the AS/400 expects it to be attached via a fixed media access control (MAC) address. But remote users end up attaching via a different MAC address each time, backing up network traffic and resulting in extra overhead processing by the AS/400.

RAS/400 corrects this problem by maintaining fixed MAC addressing schemes for each remote user.

If Thyssen's test at the corporate headquarters goes well, Olsen said they may add smaller 400/RAS servers in the steel company's Houstoo and Santa Fe, N.M., sites.

This way, users could access the central AS/400 over the corporate wide-area network without incurring expensive dial-in telephone line costs.

Prices start at $1,795 for the RAS/400, depending on the number of ports purchased.



HP line bundles 'net server tools

By Jaikumar Vijayan

HEWLETT-PACKARD CO. is bringing its various Ioternet server products under one brand umbrella.

The Palo Alto, Calif., company last week introduced its Unix-based HP Domain line of prepackaged Internet servers and software aimed at medium-size to large corporations.

HP also announced HP NetServer Web Master, a Windows NT 4.0-based Ioternet server aimed at small and medium-size businesses.

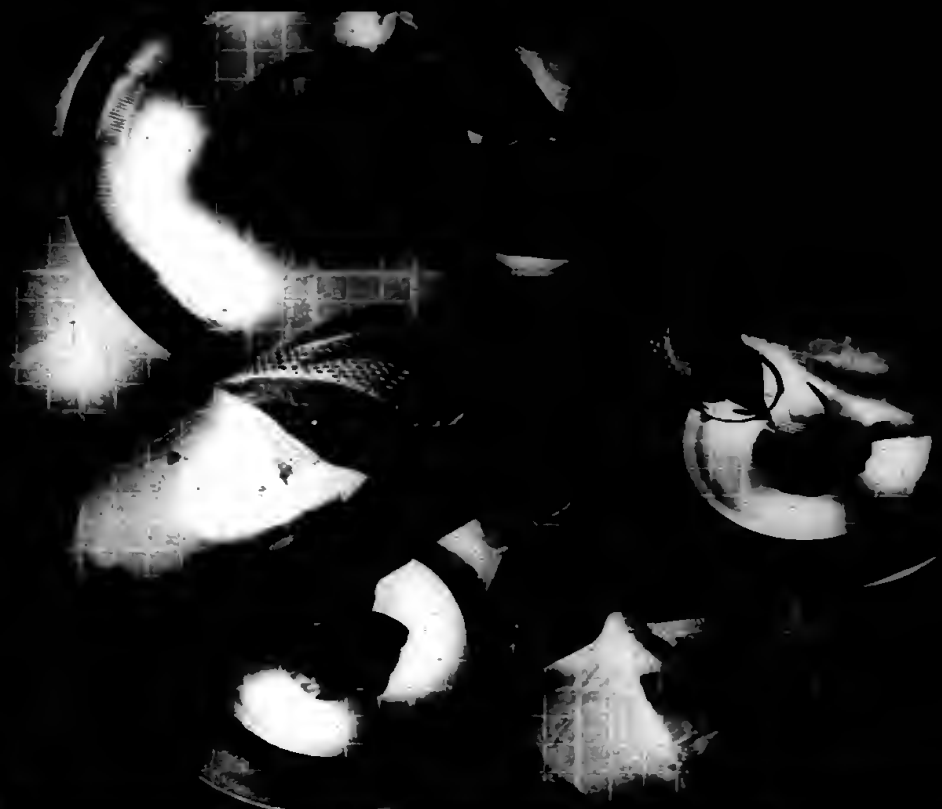
The packaging is supposed to make it easier for corporations to purchase, install and configure World Wide Web servers, analysts said.

"People want to get started quickly on the Internet. HP is adding a layer of functionality" on its server hardware that will help them do so, said Jean S. Bozman, an analyst at Ioternational Data Corp. in Mountain View, Calif.

FAMILIAR RING

HP's announcement is similar to the one made by rival Sun Microsystems, Inc. more than a year ago. Like Sun's Netra servers, the HP Enterprise Domain Internet server will feature a set of preintegrated Web and management software.

The HP Domain Business Suite, which will be bundled with the servers, is based on Netscape Communications Corp.'s SuiteSpot software. It includes Web publishing and navigation tools, legacy data access, replicatioo services, HP's OpenView systems management software and the HP OpenMail messaging system.



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Cash doesn't always cut it

▶ *Nontraditional contract remedies can help companies guarantee a vendor's performance*

By Julia King

MONEY CAN'T guarantee system performance or ensure that vendors will live up to promises made on paper.

What works much better are nontraditional contractual remedies, which information systems buyers increasingly are writing into purchase agreements.

Rather than require a supplier to pay a financial penalty for a late delivery or buggy software fix, "require resolution of all disputes within 24 hours or they escalate two levels up to an executive vice president," said Joe Auer, president of International Computer Negotiations, Inc.

One aerospace firm's contract mandated funeral attendance by the CEO in the event of a fatal helicopter crash.

Under this scenario, what usually happens is both parties "find new and amazing ways to work together because they don't want to go to their boss' boss with their petty problems," Auer said.

One contract with which Auer was involved stipulated that the CEO of an aerospace firm would attend the funeral of any U.S. military pilot killed in a crash of any helicopter designed and manufactured by the firm. The CEO would also present each of the dead pilot's survivors with a rose and make a public statement regarding the accident. Prior to the contract, there had been several crashes and fatalities. To date, there have been no crashes under the new contract, Auer said.

The bottom line is that "remedies [should not be used] to penalize for nonperformance but to incent suppliers to perform," Auer said.

Holding individuals accountable works far better than levying monetary fines, he said.

Deal do's and don't's

- Don't disclose that you're standardizing on a particular hardware or software platform prior to negotiations. It weakens your bargaining position.
- Don't give vendor partners office space on your premises. Keep access to rooms and buildings open. Don't let them use information advantage it gives them to learn about your company's technology needs and bargaining strategies.
- Do negotiate in person. Vendors do.
- Do find out when your vendor's fiscal year ends. Most will cut higher discounts to book year-end business.
- Do describe all deliverables in terms of time, money and quality. Otherwise you may get the product at the price you wanted but it may be incomplete or too late to use on a particular project.
- Do build in future price caps based on current negotiated fees, not vendors' list prices. If a vendor's list price increases 10% and you negotiated a 12% price cap, you haven't saved anything. — Julia King

Successful deals take planning

CONTINUED FROM PAGE 1

dent of International Computer Negotiations, Inc. (ICN) in Winter Park, Fla.

The industry grew up with IS people closing deals largely on the basis of a product's technological merits, not according to prudent business practices, he said.

A prime example is vendor partnering.

"We give vendors security passes, invite them in to use our telephones and restrooms, to play on our volleyball teams. And after all that, we expect to negotiate with them," Auer told IS buyers at a recent ICN conference on IS procurement.

The average markup on software is 90% to 150%. Vendors' markup on software with a high intellectual property content, such as SAP AG's R/3, typically runs between 700% and 800%, according to International Computer Negotiations.

"If you want to [create] better deals, pull their passes and get them off-site. Treat them like a company that is trying to maximize their profits at your expense," he said.

After that, Auer said, the ticket is to negotiate everything — even items long considered nonnegotiable (related story above).

And don't be discouraged by vendors' rejections, he said.

"If you didn't hear a no, you didn't do a good deal. If you make an offer early in the negotiations, you want to hear no. The more nos, the better the deal," he said.

Pam Schriever is among those IS buyers who negotiate everything. In the process, she saves millions of dollars.

"For us, there's never a contract that doesn't get changed, even licenses for shrink-wrapped software," said Schriever, an IS contracts manager for a health insurance firm in Seattle.

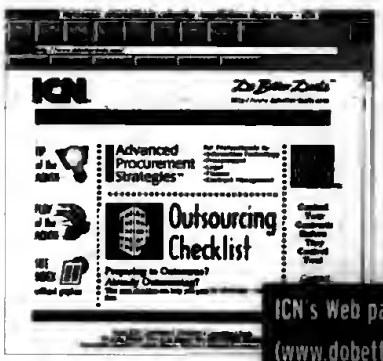
"If a vendor's package ties into our systems, we hold them to confidentiality, and we also want the ability to have backup copies off-site," she said. Neither condition is part of a typical shrink-wrapped software license.

Schriever also insists on what is known in negotiating circles as "most-favored nation" (MFN) status, which essentially means paying the lowest possible price for a vendor's product.

If an MFN buyer subsequently discovers that another company has paid less, the MFN buyer is guaranteed a retroactive discount.

"I see it as something you want in a contract as protection. It's psychological insurance," said Ralph Passarelli, manager of sourcing analysis at GE Capital Corp. in Stamford, Conn.

GE requires MFN status on all contracts with IS vendors. The vendors also must agree to have their books audited, on GE's behalf, by a third-party Big Six accounting firm. If a better deal turns up on audit, GE is informed by the firm and goes after its MFN discount. The accounting firm essentially polices the vendor to ensure that the vendor doesn't give out better deals to other buyers.



ICN's Web page (www.dobetterdeals.com) serves up tips on what to anticipate from vendors when negotiating hardware and software deals.

"The implication for us is millions in savings," Passarelli said.

He also has a personal stake in getting the best deal — his bonus is partially based on the company's overall cost savings.

GLOBAL ASSETS

Negotiating a single global contract for software also can yield hefty cost-savings.

Roger D. Schweitzer, contracts administrator at Pharmacia & Upjohn, Inc. in Kalamazoo, Mich., said his buying team shaved 50% from a vendor's foreign list price by negotiating one contract for the company's 12,000 worldwide users.

"The potential savings to customers are very big," he said.

Pharmacia & Upjohn, a $7 billion pharmaceutical colossus formed in a merger last year, has a heavy concentration of users in Italy and Sweden.

"By implementing single worldwide contracts, we're able to lock in prices globally for all Pharmacia & Upjohn locations around the world," Schweitzer said. The disadvantage is that software licenses outside of the U.S. tend to be higher, he said.

One caveat to that arrangement is that it requires vendors to have a worldwide support infrastructure in place — something few suppliers have, Schweitzer said.

Mergers also are common among vendors, and users should negotiate with that in mind. Auer recommends that buyers contract to get a sealed copy of all software program source code that can be opened under certain prescribed conditions, such as when one vendor buys out another.

Gib J. Veconi, chief information officer at Wall Street Access, a financial services firm in New York, lobbies for source code from all software vendors as part of all deals and usually gets it.

"If there's a bug, source code gives me insight into what is wrong. If I'm doing a modification, the source gives me an idea of the extent of the modification," Veconi said.

It can also save money, as Veconi found out recently when his firm needed to make a simple calculation change in an older financial application that was put in place before Veconi joined the company.

"If we had the source code, we probably could have done the modification in-house," he said. Without it, Veconi had to cut a deal to farm out the project to the original developer.



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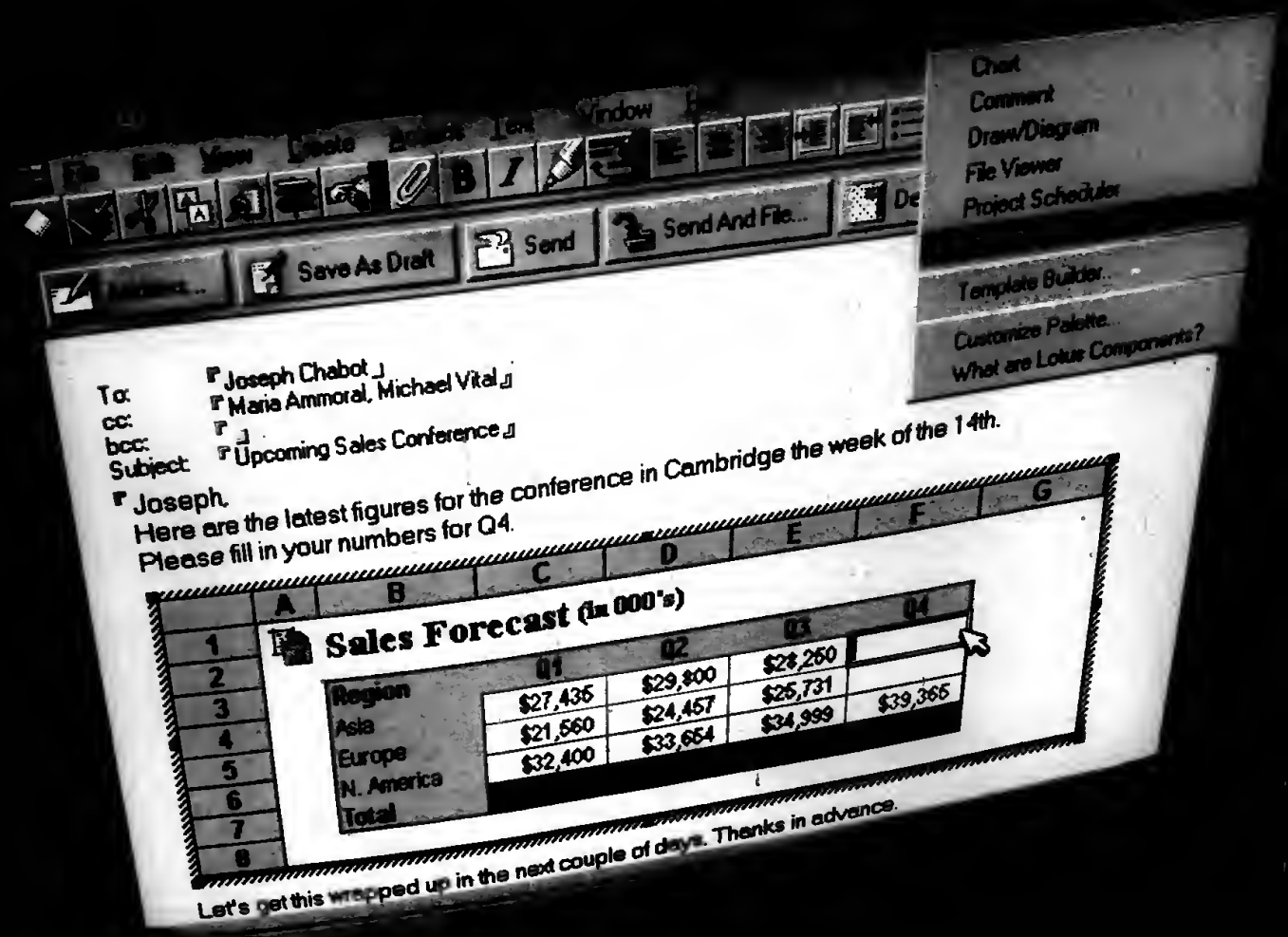
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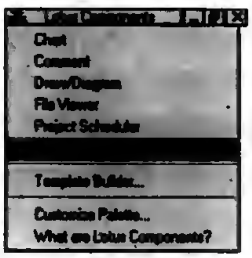
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HP breakthrough could solve data encryption problem

By Gary H. Anthes

WASHINGTON

HEWLETT-PACKARD CO. last week announced a government-approved cryptography architecture that it says will enable secure data communications across international borders while preserving the national security policies of each participating country.

It could be a big win for multinational users who are often stymied by national policies that differ with respect to the export, import and use of cryptography.

Users praised HP's flexible technology, which reportedly can accommodate the major types of encryption and adapt to changes in government policies.

"Being able to export strong encryption is something many users want to do, and the ability to operate with just one system is also very attractive," said a security official, who asked not to be named, at a multinational bank.

The HP approach, called International Cryptography Framework (ICF), will be put in hardware in HP's PCs and Unix and Windows NT servers early next year and in Intel Corp. processors later. HP and Intel said. Microsoft Corp. will let third-party application developers produce ICF-compliant products by inserting its Cryptographic Application Programming Interface into ICF.



Some order is being brought to the cryptography chaos, he says

ICF units are exportable with any type of encryption because the encryption is disabled until a software or hardware "token" activates it. The tokens will come from government-approved servers that enforce policies about items such as permissible encryption algorithms and encryption key lengths. The approach has been approved by the U.S., France and the U.K., HP CEO Lewis Platt said.

ICF will also support the controversial "key recovery" mechanisms that let law enforcers retrieve encryption keys.

Asked if users might object to governments playing a role in ICF, Platt said, "Not everyone is going to love this, but it's part of living in an orderly world. Users will be glad some order is being brought to the chaos that would otherwise exist."

Stewart Baker, a Washington attorney and the former general counsel at the National Security Agency, said, "The U.S., France and the U.K. are the hard-core countries that want to control encryption, so if they are willing to go along with this, you are not going to find some other hidden source of objection."

"This makes it easier to have encryption everywhere, and it sidesteps the great political controversy" over key recovery, added Baker, who is a prominent supporter of the government's push for key-recovery capabilities. "It lets that debate happen without [users] having to be deeply involved in it."

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Computer Industry

SPA withdraws piracy lawsuits

By Stewart Deck

AFTER IT CREATED a noisy stir in early October by suing three Internet service providers for software piracy violations, the Software Publishers Association (SPA) has quietly withdrawn the lawsuits.

The original lawsuits charged Tripod, Inc. in Williamstown, Mass., GeoCities in Beverly Hills, Calif., and Community ConneXion, Inc. (now Cnet Solutions, Inc.) in Oakland, Calif., with copyright infringement.



Before the SPA dropped its lawsuit, it alleged that Tripod's site contained tools and links for hacking software

COPYRIGHT INFRINGEMENT

The suit claimed that each company's World Wide Web pages contained software with the copyright protection removed, "cracker" tools for removing copyrights and software serial numbers that would validate illegally copied software.

The suits against Tripod and GeoCities were dropped after the 1,200-member SPA based in Washington reached settlements with the providers.

The suit against Community ConneXion was dropped in late October after the Internet service provider claimed it had never received the SPA's warning of pending litigation.

"We reached a settlement by making some minor changes to our terms of service," said Ethan Zuckerman, vice president of research and business development at Tripod. "We've made it clear [to users] what specific copyright activities we forbid," including the posting of serial numbers that validate software and posting of software with copyright protection removed.

"The suit was the SPA's way of saying, 'Hi, we'd like to talk,'" Zuckerman said. "I wish they hadn't done it that way because we were already in discussions with them. The suit caught us by surprise."

Zuckerman said Tripod didn't agree to institute site monitoring procedures that the SPA requested.

GeoCities also declined to review material before it is posted on its site but agreed to "enhance our content guidelines to be more clear about copyright infringement policies," said David Bohnett, president and CEO of GeoCities.

Community ConneXion/Cnet considered the lawsuit "frivolous and completely groundless," according to Sameer Parekh, president of the company.

"The SPA had absolutely no basis and no evidence for their contributory copyright infringement lawsuit against us. Their bullying tactics were completely outrageous and unethical," he said.

Parekh said his firm is seeking a formal apology and the reimbursement of legal fees from the SPA.

Calls by a reporter to the SPA weren't returned.

WWW

www.tripod.com
www.geocities.com
www.cnet.com

DEC aims for the margins

▸ *Struggling PC division targets Windows NT desktops, Intel-based servers*

By Jaikumar Vijayan

AFTER MORE THAN a year in the red, Digital Equipment Corp.'s battered PC business unit is quietly putting together a new game plan that observers say gives it a reasonable chance of long-term survival.

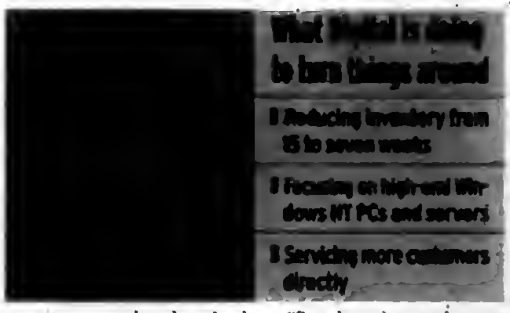
The strategy this time around: Forget market share and go after the margins instead.

"Our strategy since the early '90s was simply to get big fast ... get into all maps, all geographies, all markets," said Howard Elias, Digital's vice president of marketing.

"It helped us grow big pretty fast and be a player in all markets by the end of 1995. But we were a leader in none," said Elias.

NARROWED FOCUS

As a result, the company is now focusing on a much smaller — but far more lucrative — segment of the business: high-end Windows NT-based PCs and enterprise servers based on Intel Corp. processors.



"It is a sensible strategy. Servers have twice the gross margins of average PCs, and these are markets where Digital has some core competencies," said Terry Shannon, editor of "Shannon Knows DEC," a newsletter in Ashland, Mass.

"If they can ship a lot of servers, that is going to help their bottom line quite a bit," said James Garden, an analyst at Technology Business Research, Inc. in Hampton, N.H.

"But they also need to cut costs" and get a tighter grip on channel inventory, he said.

Over the past few months, the PC unit has taken the lion's share of the blame for Digital's recent financial downturn. The firm's expensive withdrawal from the consumer market and large inventory of desktop PCs are thought to have contributed to significant losses over the past year, according to analysts. The company doesn't break out separate results for each of its business units.

MOBILE COMPUTING

Hitachi tries to crack laptop market

By Robert L. Scheier

WHEN JIM SNIVELY thinks of the $77 billion Hitachi Ltd., he thinks of stereo tuners. That's bad news for a company trying to crack the U.S. mobile computing market.

"Hitachi really doesn't have any reputation for us as a notebook vendor," said Snively, a systems consultant at Sun Co., a petroleum refining and marketing firm in Philadelphia. Most of its 500 to 1,000 notebook computers are from Compaq Computer Corp. and Toshiba Corp.

Building a reputation is only one challenge Hitachi PC Corp. faces.

The San Jose, Calif.-based company must also hold down costs, build a service and support infrastructure as well as stay nimble enough to refresh its product line in the six- to nine-month cycles typical of the PC industry.



"Our biggest challenge is understanding where the market is going ... and implementing things at the right time," said President and CEO David Hancock, a former Apple Computer, Inc. marketing executive who joined Hitachi in January.

In the second quarter, Hitachi notebooks leaped from zero to No. 12 in U.S. market share, according to International Data Corp. (IDC) in Framingham, Mass. But IDC analyst Bruce Stephen said Hitachi sales were boosted by shortages of other vendors' notebooks.

Hitachi has tried to differentiate itself from "communications-ready" notebooks, such as the soon-to-ship Mx Series, which have features that include built-in 28.8K bit/sec. modems and LAN adapter ports.

The 100-person company isn't profitable yet, Hancock said, because it is investing in the planned launch next year of new desktop and server products, as well as expansions into European and Asian markets.

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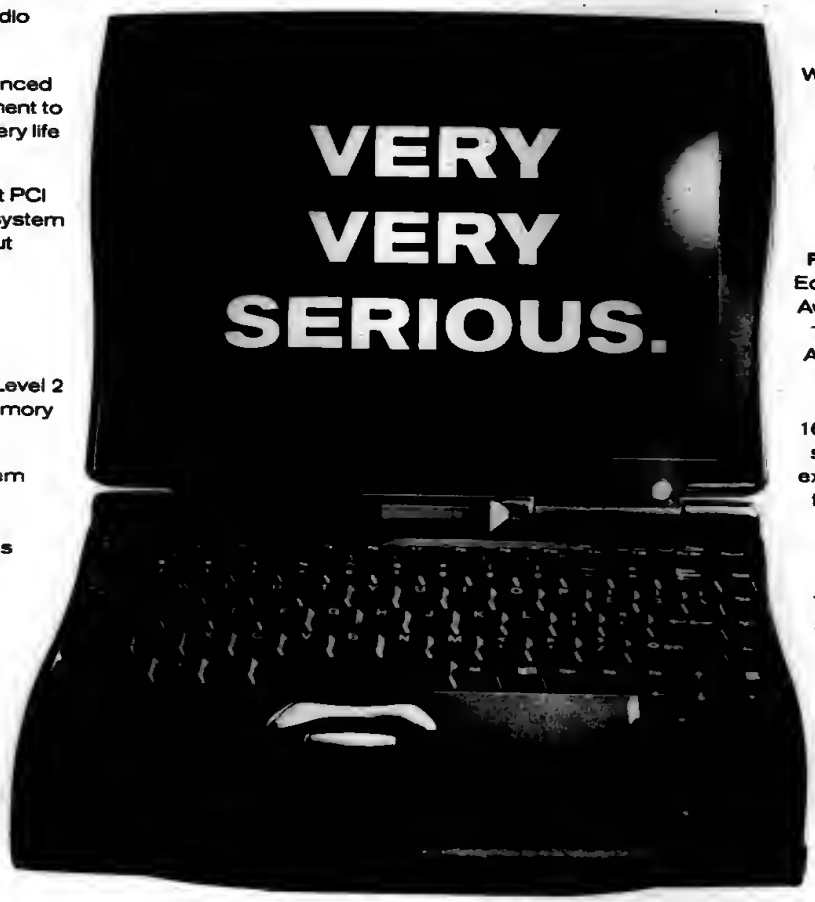
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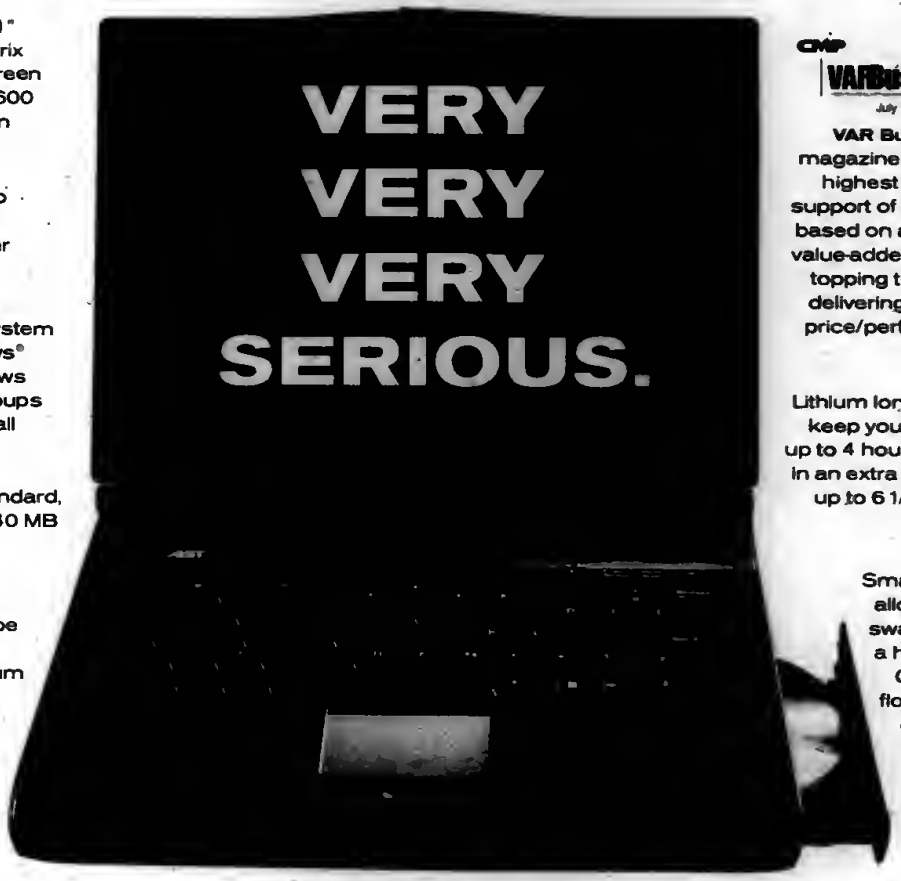
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EDITORIAL

A flash in the pan? So there I was in a private room at Comdex, holding hands in a circle with three IBMers.

No, we weren't conducting a seance to bring OS/2 back from the dead. And yes, we were fully clothed.

Actually, Tom Zimmerman was showing me his PAN, as in personal area network.

The IBM researcher says people are natural conductors of electricity because we are all basically "big bags of salty water," as he puts it. If you've ever eaten pretzels on an airplane, you know this to be true.

He has built a programmable transmitter the size of a deck of cards that uses the human body as a conduit.



Zimmerman sees a few not-half-bad uses for this gizmo. People who are "walking offices" can link their multiple electronic devices. Banks and credit-card companies can create back-end systems that would let you access your ATM by touching a keypad.

And two people wearing the transmitters could exchange business cards with a handshake. That would be PAN-to-PAN networking.

Of course, some wrinkles need to be ironed out.

After a day of being jostled by Comdex crowds, you could go home and download business cards from hundreds of people you never met. What body language is involved when you meet someone who you don't want to have your business card? And what if these devices spawn a whole generation of "smart" pickpockets who brush up against you on the subway and download all your credit-card numbers?

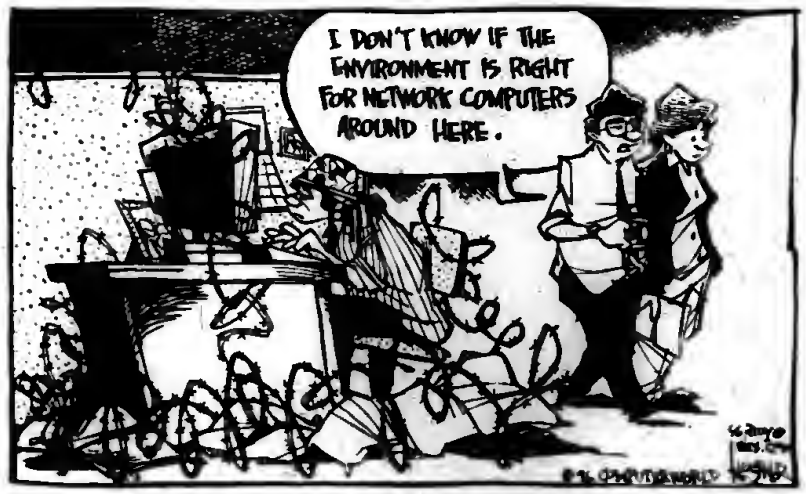
Zimmerman says he's working on security features.

As for another area of concern, he maintains that the one-billionth of an amp charge involved is so low that it won't give you cancer, throw off your pacemaker, disturb your electrolytes or make you a lightning rod.

He envisions PANs being built in to people's shoes. If that ever comes to pass, my recommendation would be to dub it the PAN-99, in honor of Maxwell Smart.

Neal Weinberg

Neal Weinberg, Assistant news editor
Internet: neal_weinberg@cw.com



LETTERS

Editorial was on target

THE COMMENTS IN Neal Weinberg's editorial ["Video veto," CW, Sept. 30] are right on the mark. Only this week, a vice president of information systems asked me why people don't use videoconferencing. Human nature is hard to change.

Robert A. Zawacki, Ph.D.
Professor emeritus of management and international business
University of Colorado
Boulder

Why should Sun revolve around Microsoft?

PAUL GILLIN said he was preparing to blast Sun's position on Windows NT ["Sun's gamble," CW, Oct. 21]. Maybe what Sun CEO Scott McNealy was saying is that he offers his customers a quality, leading-edge operating system.

Maybe you should consider blasting [Microsoft Chairman Bill] Gates for not bundling his software with Sun's Solaris Unix.

Kirk Pepperdine
Miami
kirk_pepperdine@email.fpl.com

I AM VERY GLAD that Paul Gillin's column turned away from its original intent. *Computerworld* contributes to what customers demand through articles and reviews, and there is certainly a Windows NT-centric bent to much of the magazine. Much of that seems to be targeted toward building customer demand for products and technologies that are not yet available or standards-compliant, and that amounts more to market-speak than technology.

Unix isn't competing against Intel

When the Microsoft Marketing Machine rolls out more information about how Microsoft is the leader in Internet everything, look at the Sun corporate directory and see how many people there have their names on [requests for comments]. Then take a tour around the Internet and see how many Suns are celebrating more than one year of service. Can we count on it that the revelation that "... most server software that runs on NT already runs on Sun's Solaris operating system ..." might have some impact on future content of *Computerworld*?

Larry Mills-Gahl
Evanston, Ill.
lmg@webfarm.com

Intel machines can be used to run Unix

I SEE BY YOUR Editorial Calendar that your publication is about to make a classic dopey mistake, which I've seen many publications make before. Your schedule indicates a feature titled "Closer Look: Intel workstations vs. Unix." Intel is a processor. Unix is an operating system.

By saying, "Intel vs. Unix," you are making a specious implication that Unix does not run on Intel machines. This is simply false.

And you mislead readers into thinking that if they want to run Unix, they can't use Intel machines. I've run many Unixes on Intel-based machines. C'mon guys, get with the program! What you mean to say is "NT vs. Unix." Unix is *not* competing against Intel. Unix runs on Intel (Unixware, Solaris, SCO, Linux). If you want to make a true comparison, compare a Windows NT Intel workstation to a Unix Intel workstation.

Cosmo Lee
New York

Education vs. training

CONGRATULATIONS to Efrem G. Mallach on his opinion piece "Education and training aren't the same" [CW, Oct. 7]. Here at San Diego State University, we reached similar conclusions when we designed our information systems major.

Reputable proprietary computer schools in this area offer valuable training in today's hot topics. We often recommend them to students and employers. Our role is definitely education for the full span of a graduate's professional career. We know we're right when we watch our grads move into careers as respected consultants, managers of global telecommunications systems and designers of business systems for major corporations.

Allan Bailey
Dean
College of Business Administration
San Diego State University
allan.bailey@sdsu.edu

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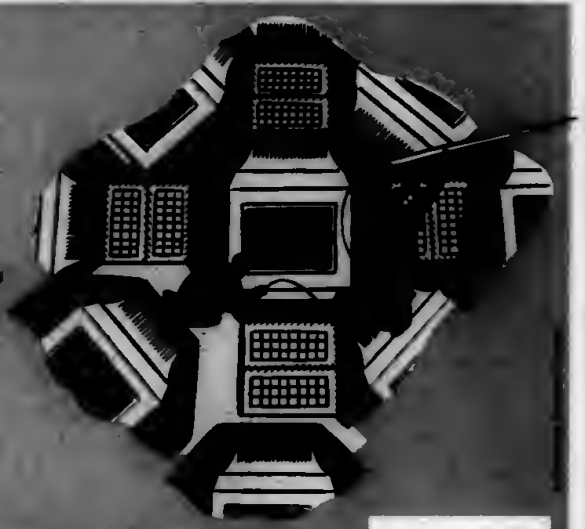
Volume 1 • Number 6 • November 25, 1996

COMPUTERWORLD intranets

THE MANAGER'S GUIDE TO WHAT'S REALLY IMPORTANT

COLLABORATIVE INTRANETS

All Together Now — Almost



Until Web groupware makes interoperability seamless, stitching proprietary systems together will have to do

BY SURUCHI MOHAN

If Internet zealots were to be believed, all proprietary groupware systems would have been junked by now and systems built around open Internet standards put in their place. But that's not reality.

Most companies that want groupware — workflow, calendaring/scheduling, threaded discussions and electronic mail — on their intranets are adapting proprietary systems to Internet-derived technology. It'll be at least a year before groupware designed from the ground up for the Internet — or its corporate buddy, the intranet — is ready for prime time, observers contend.

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ANALYSIS

All Together Now

Continued from page 1

"Today it is an information-sharing cloud out there," says Gerry Murray, a senior analyst at International Data Corp. in Framingham, Mass. His point: So far, most companies have static Web pages that enable only casual collaboration — that is, asynchronous sharing of information. Fully Web-enabled groupware with features such as standards-based calendaring/scheduling is about a year off, he notes.

For those struggling with their proprietary groupware, the biggest problem is making the applications synchronize across large numbers of servers or read various E-mail attachments.

"Groupware is not at the point where users can take applications from multiple vendors and make them interoperate," says Gary Rowe, principal with Rapport Communication in Roswell, Ga.

In the works

Some groupware standards are emerging, and that should help. The Lightweight Directory Access Protocol (LDAP), for instance, will allow compliant servers to look up names and addresses across disparate directory services in response to client queries. Users would then be able to send data to one another regardless of the applications they run or where data resides.

Other standards in the works that would engender groupware intranets: the Internet Mail Access Protocol, which would support a central message store, making it easier for remote users to access E-mail; a new calendaring/scheduling protocol that would allow interoperability among different calendaring products; and Internet-standard application tools that generate HTML and support HTTP, SMTP and NNTP protocols.

But the standards process has its own momentum and vendors their own agendas. The X.500 directory protocol, for instance, which was to provide universal access to files across directories, is being challenged by Netscape Communications Corp.'s own directory standard.

With standards in flux, many companies are acting cautiously.

Take Plano, Texas-based JC Penney Co. Home office and field workers use the company's intranet to access static information — performance reports on the approximately 1,200 stores, benefits information, organizational charts. The company wants to do more, but it's letting the dust settle first, says Tom Grant, a senior project manager.

"Workflow will be big once we can work out all the bugs," he says, noting that the nature of information is changing and data soon will be more dynamic and available in real time. "Once we can do forms, [groupware] will take off." Forms will enable administrative functions, such as processing expense reports and ordering supplies. They'll be used to respond quickly to customer needs, too.

For example, if a store tries out a new product in one of its outlets and gets a positive response, the company can use workflow software to order more items and then to sell them in other stores. Turnaround time would be a couple of days instead of a few weeks, Grant says.

Shell Services Co. in Houston already has some groupware functionality on its intranet, achieved by blending existing groupware — Lotus Notes — with its intranet. Besides full E-mail capabilities, the intranet carries job postings, a pager beeper system and daily production reports from the Gulf of Mexico.

Within 12 months, Bob Martone, manager of electronic commerce at Shell, expects to go a step further. Interactive databases for inventory, payables, receivables and oil-well production will proliferate, with people updating, querying and sharing — using the intranet for workflow. One specific use will be a system to handle surplus equipment. Shell will post what's available on its in-



tranet and the Internet, making it available to companies to buy, sell and exchange. Customers will be able to place their orders, and Shell to fill them, using Internet technologies, Martone explains.

Web-enabling your groupware

Justifying the use of groupware in the first place was a big deal for some users in the early 1990s. Carrying the technology to the Internet has been much less so.

"What is the intranet gets blurred now that back-end stuff like Notes [and Microsoft] Exchange support Internet protocols," says Alan Baren, a manager in knowledge management at Coopers & Lybrand's New York office. The company has 110 Notes servers and 45,000 Notes users worldwide. "With Domino [Lotus' Web server] and [Notes] Version 4.5 [to be renamed Domino 4.5], we instantly have an intranet."

To Baren, groupware on the intranet means opening up proprietary back ends to standard Internet protocols. "We are in the process of making Web-ready a number of Notes applications."

Continued on page 4



ONLINE

- How should you go about adding groupware functionality to your intranet? Join consultants David Coleman and Mellanie Hills in an interactive forum at http://www.computerworld.com/intranets.

Also online this month:

- Expanded interview and RealAudio with Banc One Financial Card Services Corp.
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Continued on page 4

Getting Started

ADVICE

Contemplating groupware functionality for your intranet? Here's how experts say you should proceed.

1 Figure out what you mean by groupware. Shared documents, synchronous collaboration and workflow all pose different problems, so know your definitions.

Collaboration on an intranet refers to asynchronous document sharing — that is, people using documents at different times. These might include telephone directories, company policies and knowledge databases. Groupware, on the other hand, involves more interaction. It includes workflow, discussion databases with threaded conversations, electronic mail and calendaring/scheduling.

2 Determine what you're trying to accomplish, and examine vendor offerings for each objective. Are they open or proprietary?

3 Think big. Keep in mind that the immediate application is not the end of the game. A calendaring/scheduling application, for example, may eventually develop into workflow.

4 Choose your vendor carefully. Consider second-tier vendors that will grow with you rather than a vendor with just one killer app.

5 Determine if your applications are truly platform-independent. How proprietary or open is the development environment?

6 Grill vendors on how they'll be extending the intranet environment to the desktop — Java, ActiveX or a proprietary approach.

7 Test your applications on a representative pilot group; otherwise, you might give everyone the functionality only a few need and miss something that everyone wants and is fairly inexpensive.

8 Don't underinvest in the infrastructure. As your company's needs expand, stress on the infrastructure will increase. It is important that the system be able to withstand it.

—Suruchi Mohan

ONLINE

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- Expanded interview and RealAudio with Banc One Financial Card Services Corp.
- Banc One's intranet: screen shots
- Banc One's intranet: workflow diagram
- Groupware vs. collaboration: definitions
- Groupware tools
- Reports and conferences
- Link to past issues
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intranets

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Continued from page 3

he says. Doing so is key to moving his company's intranet into its second generation, where dynamic and interactive applications replace static information.

Most companies already using some form of groupware will do likewise, says Tim Sloane, an analyst at the Aberdeen Group in Boston. But "in two years, people won't think about implementing something on Lotus, Microsoft or Novell. They will think about implementing on Internet standards. They will look at platforms to see which one does it most efficiently, effectively and at the best price," he says.

By then, back ends developed specifically for the Web will offer more Notes-like functionality, and applications written for these servers will be interoperable. For example, SuiteSpot from Netscape will offer a Notes-like environment predicated on open standards. And Netscape's recently announced Communicator will provide access to back-end services via a desktop environment consisting of a browser and the ability to run standard E-mail and word processing applications.

"If you develop to Netscape, you build Java applets, which can be deployed to any other Java-based platform to be executed," says Sloane. Notes can't do that — yet, he adds.

Resources

REPORTS

"Electronic Collaboration on the Internet and Intranets" and "Groupware Collaborative Strategies for Corporate LANs and Intranets" are two reports from consultancy Collaborative Strategies Inc. in San Francisco. http://www.collaborate.com/intranet.html

Resources

PICK OF THE CLICKS

The Carlson School of Management at the University of Minnesota in exploring groupware and intranet options has compiled a set of links to all the major vendors' sites. Some offer free software trials. http://www.csom.umn.edu/WWWPages/OIT/groupwr/group.htm



What about the pipes?

Adding groupware functionality means that infrastructure issues also need to be addressed. TCP/IP is a given, but it's not a slam dunk when it comes to groupware, says John Parkinson, principal at Ernst & Young in Irving, Texas.

In large groups, IP can cause unexpected transmission delays. And because the Internet is a packet-switched network, it doesn't handle persistent connections well. That means simultaneous communication among many end points — which groupware may require — is not efficient. "IP management is a much harder job than most people think," Parkinson says.

How this will be resolved isn't clear. For now, groupware over the intranet is a work in progress.

Mohan is a freelance writer in Los Altos, Calif.

Standards to the rescue

EXPLAINER **A number of Internet standards are, or soon will be, in the works that will help groupware on the intranet, says David Crocker, a member of the Internet Engineering Task Force, the group that will bestow the "standard" status on these protocols. Crocker is a principal at Brandenburg Consulting in Sunnyvale, Calif.**

1 **ACAP, or Application Configuration Access Protocol, will let applications access configuration profiles maintained on a central store. This will allow users to access information according to their preferences.**

2 **Calendaring/Scheduling Protocol will allow interoperability among different calendaring products. It has strong support from vendors. "This will be a very important enhancement for the intranet and interorganization collaboration," Crocker says.**

3 **IMAP, or Internet Mail Access Protocol, is well on the standards track and will become a major market force next year. It will enable easier support of a central message store, making it simpler for traveling users to access their mail.**

— Suruchi Mohan

Continued from page 3

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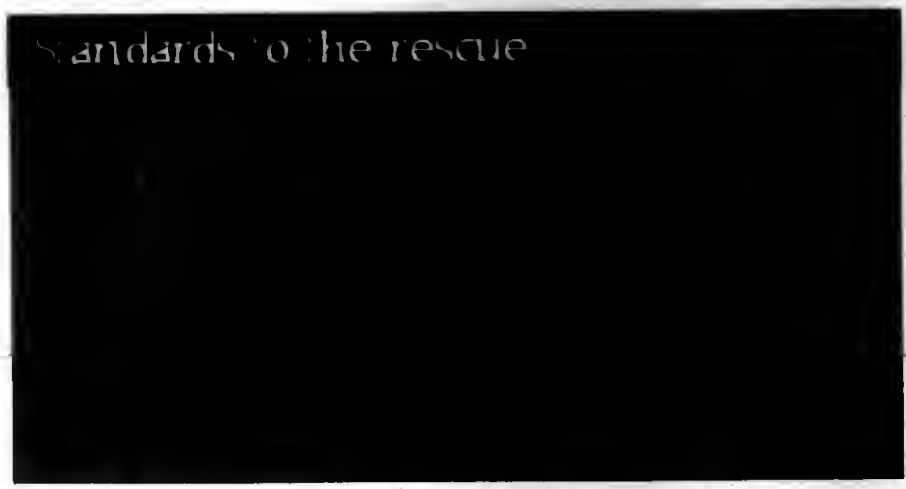
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PROJECT



Banc One Financial Card Services Corp.

Columbus, Ohio

Collaboration is still a cutting-edge component for intranets. But Banc One Financial Card Services Corp., a processor of check and credit card transactions, didn't waste any time. With a setup that combines Lotus Notes and a Lotus Domino server with an intranet, it's brought inter-company communication and workflow online for 25 large customers. The Notes/intranet combo is part of a larger system that's expected to cut cycle time by 50% and total costs by 25% in two years; the cost of the Notes/intranet portion is expected to be recovered within one year.

Freelance writer Steve Alexander spoke with Bill Sheley, Banc One's vice president of transaction processing services, and Greg Moran, enterprise architect.



PHOTOGRAPH BY TOM ROSOWSKI

Banc One's Bill Sheley: ***"Cutting issue cycle time by approximately 50% is our objective."***

What they're doing

A combined intranet and Lotus Notes database linked to mainframe applications and an image-processing system allows customers to interact with the company. Customers — including brokerage firms, insurance companies, credit unions, financial fund managers and community banks — use Web browsers to request financial information or retrieve electronic images of paper checks and charge-card forms. Because the intranet is linked to a Lotus Notes database, Banc One employees receive the requests through a Notes desktop client. Banc One executives and field account managers can monitor the status of customer requests with browsers on the Domino intranet server.

Why they're doing it

To speed up customer service while lowering the cost of doing business. There are four customer applications on the intranet and related systems: action requests and status checks on those requests; requests to stop payment on checks or to return bad checks; the ability to view electronic images of checks written for large dollar amounts before approving payment; and the ability to review help screens about Banc One software, products and services.

How they let customers in

Customers can access the intranet via the Internet or through dedicated T1 and 56K-byte phone lines. In either case, they enter through a combined Internet/intranet server, whose security features control what intranet actions customers can take and what intranet data they can see.

How they identify customers

The Notes name and address database and access-control list identify users. In addition, IP filtering identifies the physical node that a message is coming from and rejects any node not known to the server. Secure key devices are required to gain access to some applications, such as check imaging. Secure Sockets Layer (SSL) encryption is used for communications with customers using the Internet. (Dedicated line communications aren't encrypted.)

What the intranet replaces

Paper forms and faxes.

Staffing

To bring the intranet service to market quickly, Banc One used a team of internal IS people and Arthur Andersen consultants. Banc One's IS staff provided the business context and used the tools; Andersen provided Notes and intranet expertise.

Cost

Less than $500,000 to get the intranet and Lotus Notes groupware up and running.

Payoffs

Banc One expects to recover its intranet/Notes costs within a year. The larger system (which includes a mainframe and image processing) is expected to cut company cycle time by about 50% and reduce costs by 25% in about two years. The cycle time and cost savings were dictated by business objectives rather than technology.

Advice

Assess your internal competencies before starting the project, and approach the problem incrementally. Banc One brought in consultants to achieve quick results rather than waiting until it developed internal IS expertise. To get quick results, it picked a relatively small project that could be done rapidly.

Biggest technical challenge

Using authorization, access control and encryption to guarantee that proprietary information on the intranet would be secure from Internet hackers.

Biggest surprise

The speed at which the intranet model and the Lotus Notes groupware model could be combined.

Alexander is a freelance writer in Edina, Minn. He can be reached at sorlon@ix.netcom.com.

Netscape's James Barksdale on Informix.



James Barksdale
President and CEO, Netscape Communications

"Netscape partners with Informix because of its unique Web database technology.
Together, we provide customers an ideal solution for next-generation, high-performance, content-rich Web applications."

Jeff Hudson
VP of Business Development, Informix

"The Web requires a database that combines high performance with the ability to manage a wide range of new datatypes—image, video, text, geo-spatial, and more. Informix and Netscape enable customers to quickly develop powerful, innovative Web applications that meet any business requirement."



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–The Forrester Report
The Full Service Intranet, March, 1996

And *PC WEEK* said:

For corporations planning to use internet-based technologies for internal use, [Netscape] SuiteSpot is shaping up as a better alternative...
–*PC WEEK*, May 13, 1996

Netscape's full range of intranet solutions provides greater functionality and costs less to implement than proprietary intranet solutions like Lotus Notes and Microsoft BackOffice. In fact, when Forrester polled professionally managed Web sites, 80% indicated they had chosen Netscape.

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For business, the Internet still doesn't compute

Michael Cohn

To corporate America, the 'net is old hat. The Web is old news. So if you're one of the remaining three people out there whose company doesn't have an intranet, a webmaster and a cyberstaff of thousands, it's time to ask the ugly question: Are you totally out of touch? High-tech handicapped? Chopped liver?

Well, get ready, because here comes heresy: It's OK! Stay off the 'net. For business, the Internet isn't all that it's cracked up to be. Most CEO's *think* the Internet is used for electronic commerce, sales force automation and other bottom-line-building activity.

In reality, three out of every four employees use it just to check the stock market, browse www.baywatch.bikini.com and send E-mail to their aunt in Akron, Ohio, when nobody's looking.

Get off the 'net. Wean yourself off Internet addiction one step at a time with little silicon patches.

The Internet is no place for corporate America. Stay off it. And if you're already on it, get off fast. Maybe not cold turkey. I hear you can wear little silicon patches that wean you off it one step at a time.

The 'net is bad for business. Consider the race to go paperless, to stop the memo-moving, order-shuffling, report-routing nightmare that brings productivity to its knees. We run out and give everyone Pentium chips, Internet addresses and online access. And the minute we get bombarded with electronic images, E-mail and invoices, what do we do? We *print them out*. We spend half a day getting into the print queue, loading paper and then losing it in a 6-inch stack of unfiled printouts, instead of just taking 10 steps over to the fax machine like we did in the good old days.

Then there are the costs. We used to have a handle on the phone and copier bills.

But after purchasing today's PCs, furniture, modems, bubble jets, diskettes, cards, cables and operating systems, it's no wonder Bill Gates has more money than some nations in the Southern hemisphere.

Businesses need solid footing, responsiveness and reliability. But is the Internet reliable? Remember when a major online service went down all day? To play the Internet game, you need uptime, contingency plans and at least two E-mail addresses. It's amazing: 18 months ago, most folks didn't even have *one* E-mail address, and now we need redundancy. Then again, my daughter's trying to use the same logic on me for dual Drive-It-Yourself-Barbie-Jeeps at $269 a pop.

When the Internet's up, it's great. It's limitless. It's powerful. It's easy to use, after a week or 12 of practice. But when it's down, so is your business. And who do you call? It's not like cable. They don't just send a truck to your neighborhood. You could be the victim of a switch in Sacramento, Calif. A router in Rhode Island. A Web server in the West Indies. Or Stan in accounting may have just forgot to turn on the Aptiva again.

Look, if you feel compelled to rush to the Web, have at it. You'll certainly be in good company.

But after the cost, training, equipment and frustration, you may long for the days of the rotary telephone. If you bet your company on the Internet, surely there will come the day when the system goes down. And employees will be sitting at their desks with absolutely nothing to do, unproductive, unmotivated, unable to do anything except yawn and snap their chewing gum.

Or it may be just another Monday morning. Sometimes it's hard to tell.

Cohn would run his small Atlanta consulting firm on the Internet, but all he can get his PC to say is "Bad Command or File Name."

Year 2000 upgrades: A small price to pay

Leon Kappelman

When you told your CEO about the year 2000 problem, you probably were hit with, "How did this happen?" or "Who's responsible?" But you don't need to be defensive. When you explain why it happened, go beyond the usual excuses and whip out some dollar estimates of how much you saved in storage costs over the past 30-odd years.

The explanation starts in the late 1950s and early '60s when the major constraint was the number of characters that fit on an 80-column punched card. We recorded dates with only two digits representing the year to save precious space.

Disk storage became widely available in the early '60s, but it was very expensive. In 1963, 1M byte of mainframe hard disk storage cost about $10,600 per megabyte per year in 1995 dollars. So to save money, we continued to use two-digit year fields.

By 1972, the annual cost of mainframe storage was down to $1,600 per megabyte, and by 1983 it had plummeted to just under $22 per megabyte (in 1995 dollars). And now the comparable figure is $1.08 per megabyte.

So just how much have we saved our organizations over the years?

Depending on the industry and application, 3% to 6% of the data stored in organizational databases is dates. Using four-digit rather than two-digit year fields would have required 33% more storage for dates (MMDDYYYY vs. MMDDYY). Using the 5% figure for date density, we conservatively estimate that 1% more disk storage would have been required through the years if we had stored all four digits of the year field.

One percent doesn't seem like much until you consider several factors: the large volumes of data stored by organizations, the historically high cost of storage and the rate of inflation. So for every 1G byte of organizational data stored, a 1% savings represents 10M bytes. Designing systems to save 1% of storage costs since 1963 has saved between $1.2 million and $2 million per gigabyte (in 1995 dollars), depending on how quickly storage equipment was upgraded.

Then there's the cost of capital as well as the opportunity cost had those precious dollars been spent on storage rather than invested in other ventures. Using a conservative 10% internal rate of return on capital, $16 million to $24 million (in 1995 dollars) has been saved per gigabyte of total storage in the 30 years from 1963 through 1992.

We've saved millions in storage costs, so don't be defensive about your "milennium bug" project

That's a realistic indication of the economic benefits of our date storage decisions.

So a company with, say, an average of 10G bytes of data over that 30-year span has saved $160 million to $240 million (in 1995 dollars) overall. In light of these savings, the $10 million to $50 million estimated cost for a company to fix the so-called "millennium bug" pales in comparison to the benefits accrued.

We don't have to go "hat in hand" to our CEO to beg for year 2000 project funds. We can present a strong business case for why the upgrade costs are quite reasonable in light of the many millions of dollars we've saved in the past 35 years.

Kappelman, an associate professor at the University of North Texas in Denton, co-chairs the Year 2000 Working Group of the Society for Information Management. His Internet address is kapp@unt.edu. Phil Scott, a retired IS consultant, contributed to this column.

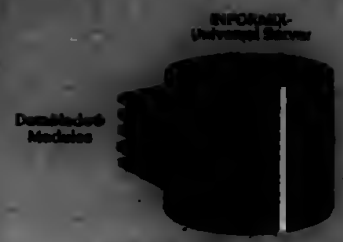
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90 Other Titled Personnel

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(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
App. Development Products ☐ Yes ☐ No
Networking Products ☐ Yes ☐ No
Intranet Products ☐ Yes ☐ No

4. Which of the following software products do you buy, specify, recommend or approve the purchase of? (Please check all that apply)
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70 Medical, Legal, Accounting Mgt.
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80 Information Centers/Libraries, Educators, Journalists, Students
90 Other Titled Personnel

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(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep
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Networking Products ☐ Yes ☐ No
Intranet Products ☐ Yes ☐ No

4. Which of the following software products do you buy, specify, recommend or approve the purchase of? (Please check all that apply)
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(b) ☐ Internet browsers
(c) ☐ Web authoring/development tools

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COMMENTARY

The net computer fantasy

DAVID MOSCHELLA

THE VEROICT IS IN. Information systems professionals are buying in to the network computer concept.

According to a recent *Computerworld* survey of 200 midsize and large organizations, the majority of IS professionals think network computers are appropriate for most employees and can save their companies money

Nearly half the respondents also believe that if they can convince themselves that the network computer will deliver, they can easily get top management to approve the transition. A remarkable 30% said they will begin to buy network computers in the next 12 months.

Such surprisingly bullish survey results beg the question of whether customer opinions this early in the network computer market should be taken seriously. Just how good of a forecaster is IS?

NEARSIGHTED RESPONSE

Having been in the research business since the early 1980s, I'm convinced IS isn't prone to knee-jerk enthusiasm for new technologies. Previous technologies that were highly promoted but eventually failed — 3270 PCs, optical mass storage, X terminals, diskless PCs, pen-based systems and the Apple Newton — never generated this level of initial IS interest.

Overall, IS professionals — like most of us — have had a pretty good sense of what they will do in the short term, and they often have no idea what the long term will look like.

This solid short-term track record is troubling, because I think network computers will play only a minor role in most enterprise environments. There are serious technical problems, such as insufficient bandwidth, server capacity and application availability, and the inevitable creation of new IS bottlenecks.

But cultural issues also will constrain use. People rightfully use their desks, telephones and computers for a limited amount of personal business. Having all employee computing stored and backed up on a central system could have a disturbing and chilling effect. There are easier ways to reduce the cost of technology ownership.

Before they get too excited about network computers, IS professionals should double-check that they aren't letting their instincts get the better of them. The risk is that normally sound judgment can succumb to the thrill of centralized control and the privileged-but-dangerous position of being an information gatekeeper. It's hard to avoid the view that IS is welcoming network computers for many of the same reasons it initially defended terminals. This alone should suggest caution.

From a purely selfish perspective, IS should never forget how much the PC has done to educate office workers about the realities of computing. It isn't a coincidence that IS has been steadily gaining respect and responsibility. The more users learn about computing, the more they can appreciate what IS people know and do. In this sense, the PC has done far more to raise the status of IS than the terminal ever did.



Before it fantasizes about managing banks of subservient network computers, IS should remember that with total control comes total accountability; this, as always, is a formula for arrogance and alienation.

Moschella is senior vice president of research at Computerworld, Inc. His Internet address is david_moschella@cw.com.

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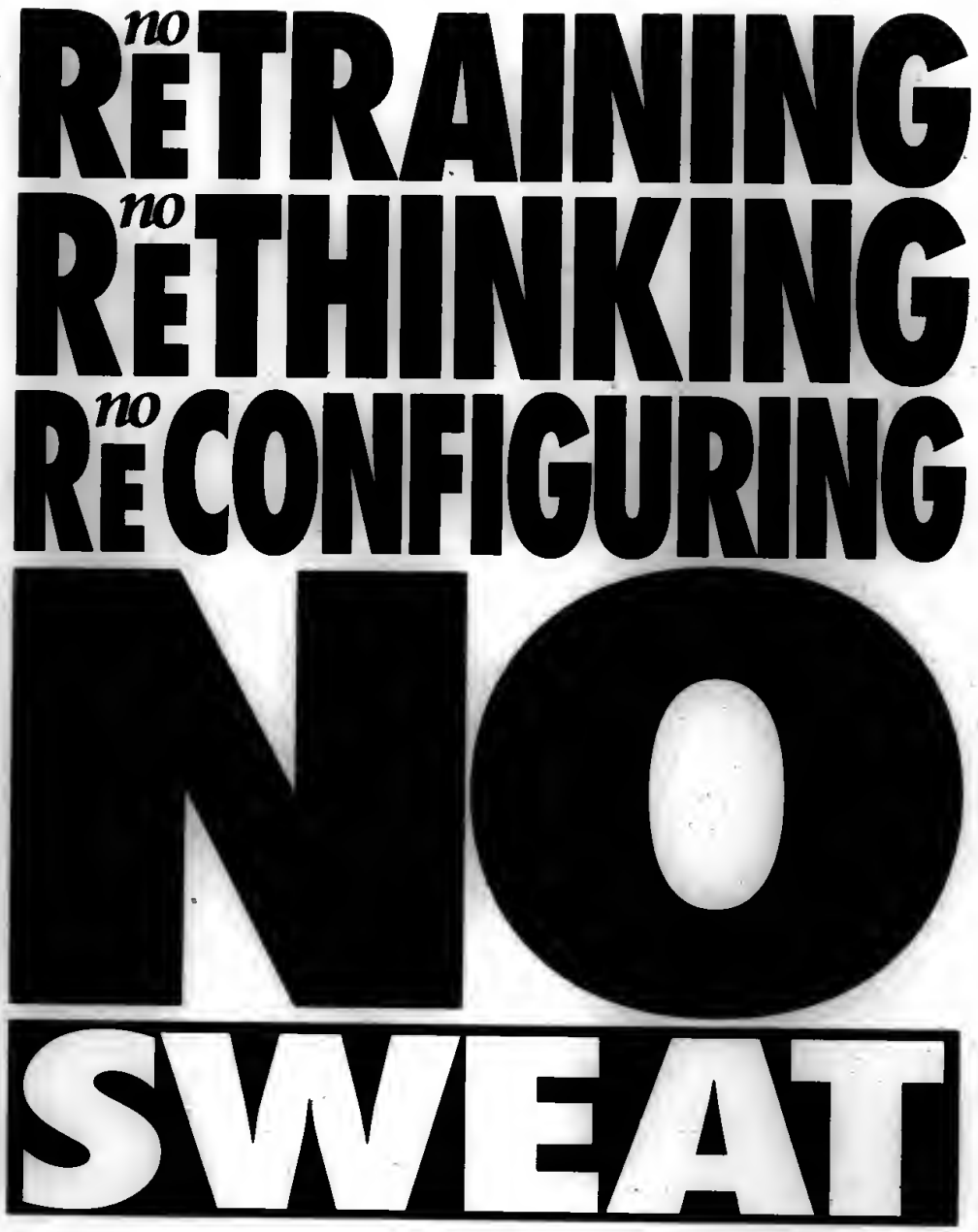
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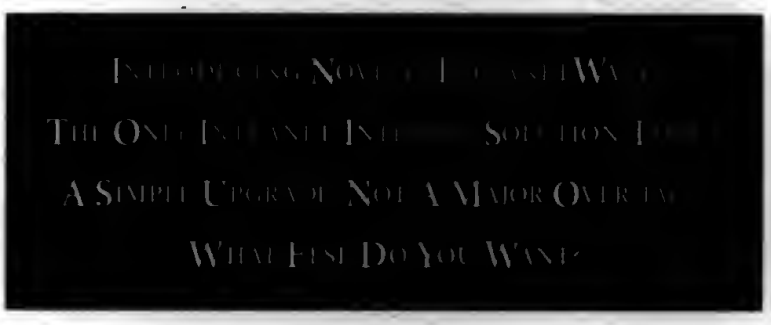
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Servers & PCs

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Briefs

[redacted]

Intel brews up plan for PCs

▸ Future chips may give TVs run for their money

By April Jacobs

LAS VEGAS

INTEL CORP.'S VISION of the future may include a world with "must-see PC" and a shot of coffee with a little HTML.

Because if company CEO Andy Grove has his way, coffeehouses will be rich in PCs that support Hypertext Markup Language (HTML), electronic mail and interactive online experiences, and people will turn first to PCs instead of television for business information and entertainment.

That was Grove's message here last week at Comdex/Fall '96. He outlined how today's and future chip technologies will shape the way businesses operate and consumers receive information and communicate with one another.

Officials at Starbucks Coffee Co., the Seattle-based coffee chain, said the company endorses Intel's plan.

Using the Santa Clara, Calif., company's ProShare Presenter software for PCs, Starbucks is piloting an application to train new employees nationwide in the art of cappuccino making and customer service. Videos are presented to multiple remote store locations that are equipped with a PC.

Using this kind of presenta-

Intel, page 42



Starbucks CEO Howard [illegible]

Company endorses Intel's plan

Windows CE gets vendor support

By Mindy Blodgett

THE HYPE surrounding the release of Microsoft Corp.'s new Windows CE operating system shifted into overdrive last week as a half-dozen hardware vendors demonstrated or announced handheld computers that support the operating system.

Following a Windows CE pre-

Windows CE, page 42



HP recommits to HP 3000

▸ Announces 64-bit PA-8000 systems

By Jaikumar Vijayan

USERS LOOKING FOR some signs of Hewlett-Packard Co.'s long-term commitment to the HP 3000 minicomputer platform may have found it in a recent announcement from the company.

64-BIT COMPUTING

Palo Alto, Calif.-based HP is leading its HP 3000 user base into the 64-bit arena with the introduction of four systems based on the 64-bit PA-8000 chip.

The announcement is expected to quell — at least temporarily. — speculation about the company's plans for one of its oldest and most popular minicomputer platforms. HP previously has come under pressure from a segment of the user base for a perceived apathy towards the HP 3000 and its proprietary MPE operating system.

This announcement "reverses the perception last year that HP would not support MPE on a PA-8000 architecture," said Jeff Kell, director of technical services at the University of

HP 3000, page 42

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What's more, dual-powered stereo speakers in front combine with a subwoofer in the swivel/tilt base to project audio that is properly shaped and sensational. Combined with its standard in-bezel microphone the media-ready series enables a complete convergence of computing and communications, which makes the new 447X series a necessity for anyone making full use of their computer.

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447Xi—High-resolution display, ideal for graphics-intensive applications

447Xm—Professional-caliber display with integrated speakers, sub-woofer and microphone

447Xmc—Adds to X series features with built-in color video camera

Briefs

Unisys on course

Unisys Corp. is developing a national computerized handicapping system for the Australian Golf Union. Under the contract, which is valued at more than $8.5 million, Unisys will connect Australia's 1,600 golf clubs and their members through a Unisys ClearPath SMP6000 symmetrical multiprocessing system.

Online manuals

Maintenance supervisors soon will be able to toss out those stacks of equipment specifications cluttering their offices. Project Software and Development, Inc. (PSDI) in Cambridge, Mass., is launching a World Wide Web site that it describes as "an online encyclopedia of maintenance equipment information."

Called MRO-online (www.MRO-online.com), the site will include firsthand data on equipment such as generators as well as links to manufacturers' Web pages. As an added bonus, users of PSDI's Maximo maintenance management software can drag and drop information from the site into the Maximo database. The site is scheduled to debut by year's end.

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HP recommits to HP 3000

CONTINUED FROM PAGE 41

Tennessee at Chattanooga. "It extends the guaranteed lifetime of the product line through another generation of hardware."

The Series 979KS family is based on the same cabinet and form factor as existing HP 3000 systems and supports up to four of the new processors. HP also announced board upgrades to the new chips for existing HP 3000 users.

THE NEW HP 3000

- Consists of four systems using the 64-bit PA-8000 chip
- Supports one to four processors
- Supports up to 3.75G bytes of memory
- Single-processor configuration starts at $100,000; $20,000 for each additional processor

SPEED AND SUPPORT

The significance of 64-bit architecture lies in its ability to support and speed up large applications. Such systems typically can support larger file sizes and feature substantially higher memory support than 32-bit systems.

HP's new systems, for instance, support up to 3.75G bytes of memory, which is almost twice the previous capacity. According to HP officials, the systems also deliver a greater-than-50% performance boost over HP 3000 systems based on the previous-generation PA-7200 chip.

"It is an easy step into the next generation of RISC" for users of HP 3000 systems, said Ron Seybold, editor of "The 3000 Newswire," a newsletter in Austin, Texas. "If you run out of horsepower in the midrange, this release just bought you some headroom."

Pricing for the systems, which are available immediately, starts at a little more than $100,000 for a single-processor machine. Each additional processor costs $20,000. Existing systems based on the PA-7200 chip can be field-upgraded to the new architecture through a processer-board upgrade, HP officials said.



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Vendors announce support for Windows CE operating system

CONTINUED FROM PAGE 41

sentation by Microsoft Chairman Bill Gates at Comdex/Fall '96 in Las Vegas, vendors such as Compaq Computer Corp., Hitachi Ltd., LG Electronics, Inc., Casio Computer Corp., Hewlett-Packard Co. and NEC Technologies, Inc. demonstrated or announced devices.

Meanwhile, more than 600 software developers have registered to use the Windows CE developer's kit, which will be available in January, according to Microsoft. And analysts at International Data Corp. in Framingham, Mass., estimate that 84,000 to 110,000 Windows CE devices will ship in the U.S. next year.

But as the Windows CE marketing machine revs up, industry observers wonder if the handheld devices will triumph where personal digital assistants (PDA) have stalled.

As the Windows CE marketing machine revs up, observers wonder if the handheld devices will triumph where PDAs have stalled.

The devices will offer a calendar, a contacts database, electronic-mail capabilities and a task list. Some devices will offer wireless communications, and most will weigh less than a pound. Users can transfer and synchronize data from the handheld computer to a PC or laptop running Windows 95. The devices will cost $500 to $700.

Some users said the time has come for a lightweight, handheld device that provides these features. But others said they will wait until the cloud of publicity surrounding Windows CE settles and they can see how the devices shape up.

Roger Kash, manager of manufacturing and floor systems at Saturn Corp. in Spring Hill, Tenn., is evaluating Windows CE handheld computers to audit cars for defects. He wouldn't name the manufacturer, but he said the devices "have been working great."

"We can automatically [synchronize] information taken from the floor with [data on our] desktops," Kash said. "Before this, we had to manually write down and enter the information. ... We didn't want to use laptops because they are heavier and a bit of a hassle, and there is a lot of difference between buying a $600 device and a $6,000 laptop."

But George Staton, an information systems analyst at Commerce Bank in Cherry Hill, N.J., said the devices "sound interesting," but he is taking a wait-and-see attitude.

Staton said he could imagine an implementation for real estate loan officers because "they need to go out to a building site and check off a list."

"But I'd like to wait awhile and see where [the devices] go," he said.

The following devices were announced last week:

- **Compaq's PC Companion** offers bundled Mail on the Run software from River Run Software Group, Inc. in Greenwich, Conn., which lets the device access Microsoft Mail and Lotus Development Corp.'s CC:Mail. It weighs less than a pound and will cost between $499 and $699.
- **Hitachi's HPC** weighs 12 ounces, including batteries. It will offer 2M and 4M bytes of RAM. No price was available.
- **NEC's MobilePro** comes in two models, with 2M and 4M bytes of RAM. It offers wireless connectivity and costs between $499 and $649.
- **Philips Electronics' Velo** has a built-in 19.2K bit/sec. modem and a voice recorder function. The device costs $599.
- **Casio** released the Cassiopeia, which comes in two models that range in price from $499 to $599.

Intel brews up plan for PCs

CONTINUED FROM PAGE 41

tion, Starbucks hopes to retain a sense of its small business roots. "This technology can help us stay small as we grow," said Starbucks CEO Howard Schultz.

Some users at Comdex said Grove's notion of a PC-dominated world is fine for desktop-dominated businesses, but it doesn't seem to do much for many mission-critical applications that still reside on legacy systems.

"His vision is good in reference to businesses where PCs are used, but it doesn't apply in areas where mainframes are used," said Mae Murray, a programmer analyst at the Kaiser Permanente Health Plan, Inc. in Pasadena, Calif.

Murray said the company already uses PCs for videoconferencing in its pediatric and adult cancer treatment areas to deliver information to patients and families. And doctors at Kaiser use Network Stations, IBM's version of the diskless network computer, to obtain medical records from large servers, she said.

HEAD-ON COMPETITION

In Grove's view, PCs directly compete with TV for the attention of viewers and users.

The continuing battle, as PCs advance in capability and eventually provide three-dimensional lifelike images, will give consumers and business users more choices for information delivery, Grove said. "Visual computing will become part of the PC just like video has," he said.

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IBM's RS/6000 will get much-needed boost

▸ *Some observers question whether it's enough to fend off Intel*

By Tim Ouellette

IBM IS PLANNING chip upgrades for the RS/6000 next year in what some say is a catch-up game against 64-bit Unix competitors and a game of keep-away from low-cost servers that use Intel Corp. processors.

The RS/6000's symmetrical multiprocessing (SMP) boxes currently use the PowerPC 604 processor. The newer 604E will be available by early next year. And later next year, users will be able to add complete Apache chips, a commercial 64-bit processor now under development (see chart).

The initial upgrade to the 604E will cost $18,000 for the first two-chip add-in board and $12,000 for each additional board.

The PowerPC 604E chip will boost performance by an estimated 50% on SMP Models J and R, IBM officials said.

But the RS/6000 must compete with Unix offerings from Sun Microsystems, Inc. and Hewlett-Packard Co., along with growing user interest in running dual- or quad-Pentium Pro processor servers.

For example, Brian Keith Smith, MIS coordinator at Carolina Handling LLC in Charlotte, N.C., said his company is debating whether to continue upgrading its RS/6000 or move to an Intel-based server. "We have found that we can purchase quad-Pentium Pro systems ... for half the price" of the RS/6000, Smith said.

PUSHING POWER

Next year's chip upgrades on the RS/6000 SMP Models J and R

First half of 1997

- Upgrade from the PowerPC 604 to the 604E

Second half of 1997

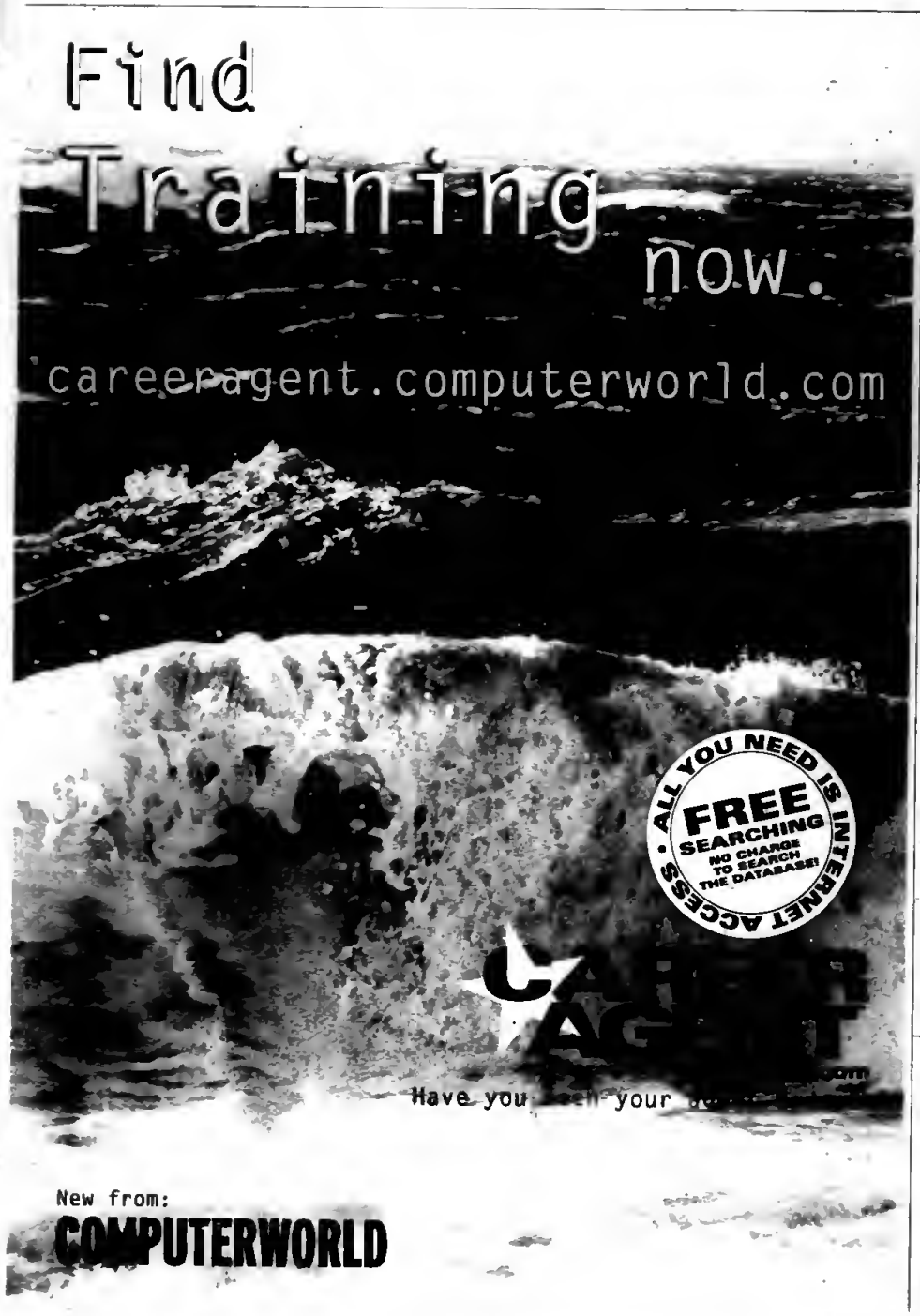
- New technical/scientific systems will offer the 64-bit PowerPC 620
- Commercial-oriented, 12-way Apache chips will ship to provide full 64-bit business-oriented systems

IBM must surpass the competition in performance improvements, observers said.

"It is fair to say that IBM's RS/6000 division deserves a gentleman's B for 1996" in terms of performance offerings to its customers, said Peter Kastner, an analyst at Aberdeen Group, Inc. in Boston. "But they believe that with their 1997 upgrades, they are headed for the dean's list."

But with Intel's low price and comparable performance, even happy IBM customers such as Smith can be swayed.

"The RISC 6000 is a good machine, no doubt. The thing hasn't failed us in almost four years. But I feel that unless IBM or one of its resellers comes up with something more attractive, we will go with a dual- or quad-Pentium Pro system," Smith said.



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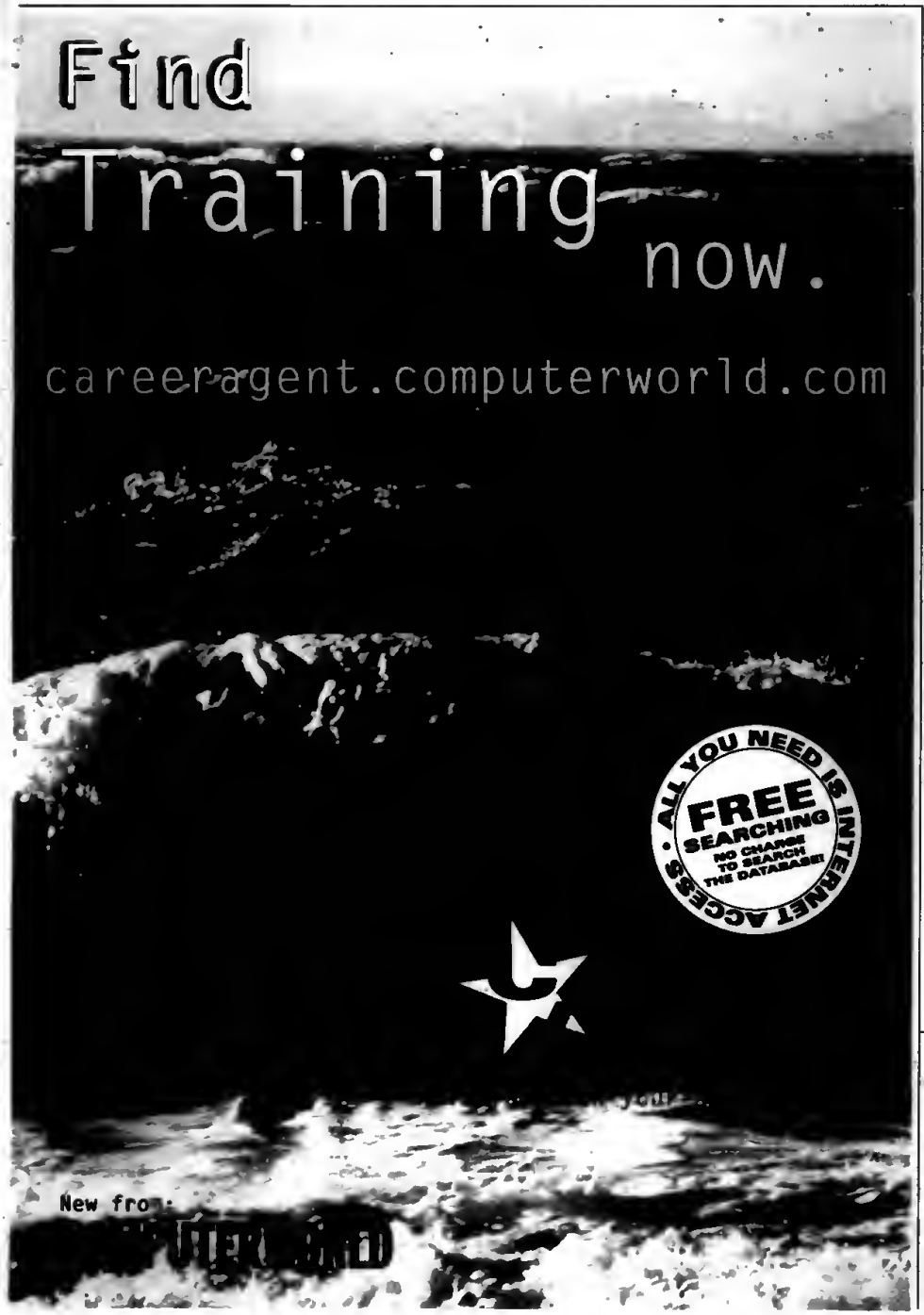


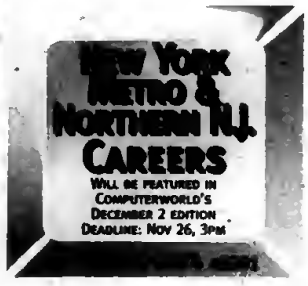
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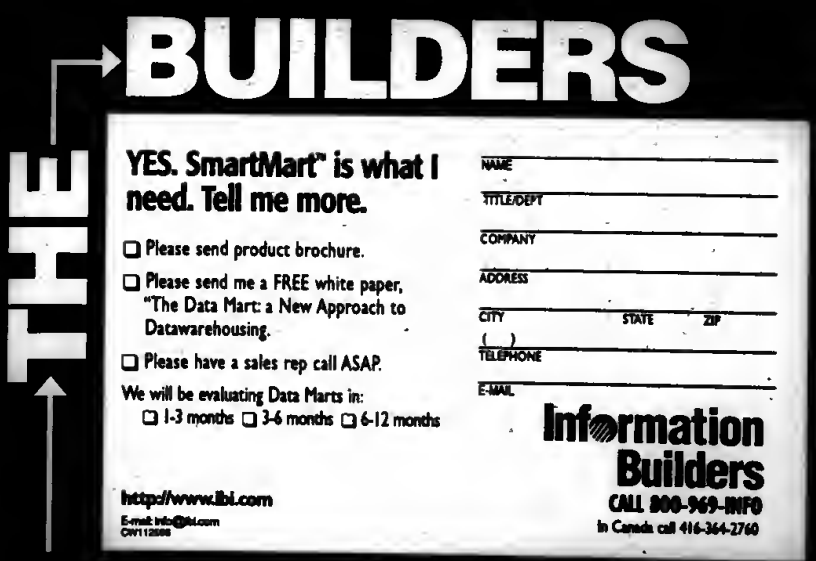
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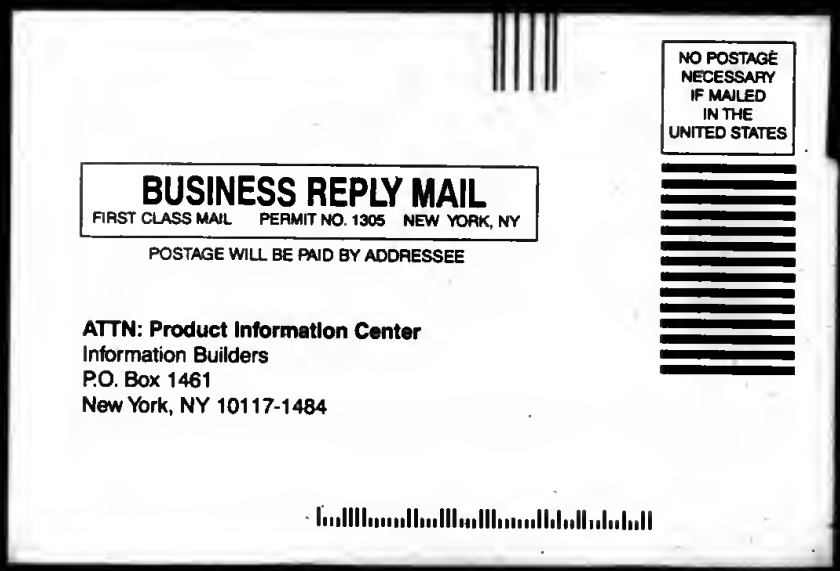
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Software

Client/Server • Development • Operating Systems

Briefs

[redacted]

Just wha

▶ *Object technology helps diagnose patients*

By Sharon Gaudin

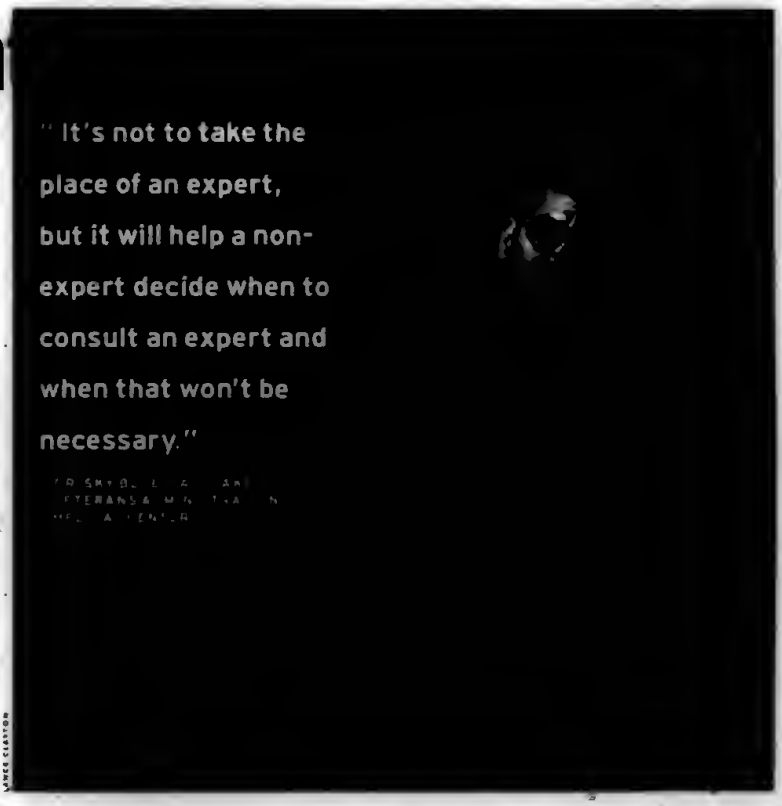
A GROUP OF University of Utah researchers are using a mix of IBM's OpenDoc and Sun Microsystems, Inc.'s JavaBeans to help doctors diagnose and treat their patients.

The application development group, which includes IBM, CogniTech Corp. and ESI Technology Corp., hopes to give medical professionals in hospitals and clinics access to the latest information on medical research, clinical testing and diagnostics from a PC.

By using the object technology in OpenDoc on the desktop and in JavaBeans over the Internet, the development team expects the application to be a valuable tool for health care providers who work in a world where clinical practices, research and treatments are always changing.

Dr. Sky Blue, a member of the

OpenDoc, page 49



JAMES CLAYTON

SAP answers user call for planning tools

By Randy Weston

MAKERS OF LARGE manufacturing client/server software are starting to understand that users want advanced planning and scheduling functionality embedded in their enterprise resource planning systems.

User demand was strong enough to spur German software giant and market leader SAP AG to make the unprecedented move of prying open its highly proprietary R/3 system and embedding a third-party vendor's technology.

CLIENT/SERVER ADD-INS

Scheduled for beta release

SAP, page 51

WEB DATABASES

Informix bumps HTML

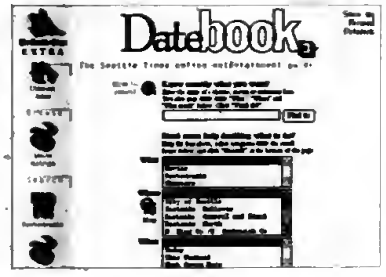
By Craig Stedman

INFOSMIX SOFTWARE, Inc.'s message to users who build interactive World Wide Web applications is: Lean on your database and forget about Hypertext Markup Language (HTML) files. That makes sense, several users said — as long as performance doesn't suffer.

The company this month announced a Web architecture that is predicated on users storing everything — multimedia content, plus all application logic and templates — as rows and tables in its databases. When end users access a Web site or click on links, Informix middleware joins rows of data together on the fly and turns them into Web pages [CW, Nov. 11].

Early users of the technology

Informix, page 49



The Seattle Times' Datebook page is generated from an Informix database

Java gets a suite taste

By Lisa Picarille

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Microsoft Corp.'s Office has dominated the desktop suites market for years, and Lotus Development Corp.'s SmartSuite and Corel Corp.'s Office Professional are battling aggressively for second-place honors.

But several factors have come into play that may make the timing right for a developer to create suites of Java-based word processors, spreadsheets, charting and graphing applications

Java, page 51

Software

Client/Server • Development • Operating Systems

"It forces some level of control over our Web developers so they're just not going wild. Unless they go through the framework, they can't get access to our database."

– JACK LOOR, DATA DESIGNER AT THE AMERICAN MEDICAL ASSOCIATION, ON ITS ARCHITECTURE FOR WORLD WIDE WEB APPLICATIONS

Briefs

Web workflow package

WebFlow Corp., a Santa Clara, Calif., vendor of World Wide Web-based workflow software, has announced an upgrade to its SamePage package. SamePage 2.0 includes threaded discussion groups and the ability to track project tasks subdivided among team members. The product, which runs on Microsoft Corp. Windows NT and various Unix systems, costs $3,500 for 10 users.

Free license

Globetrotter Software, Inc. in Campbell, Calif., is extending two-user versions of its FlexIm Windows license management software to independent software vendors at no charge — as long as their annual revenue is less than $2 million. Globetrotter doesn't charge royalties for end-user applications with embedded versions of FlexIm. The software normally starts at $4,000 per developer site, with no limits on desktop users.

Exchange update slips

Microsoft officials confirmed last week that the ship date for Exchange 4.5 will slip until the first quarter of next year. Exchange 4.5 will add a slew of improvements, including support for the Internet mail Post Office Protocol and the Web's Hypertext Transport Protocol and Hypertext Markup Language. The upgrade was slated to ship by year's end but will likely roll out at the end of January.

Just wha

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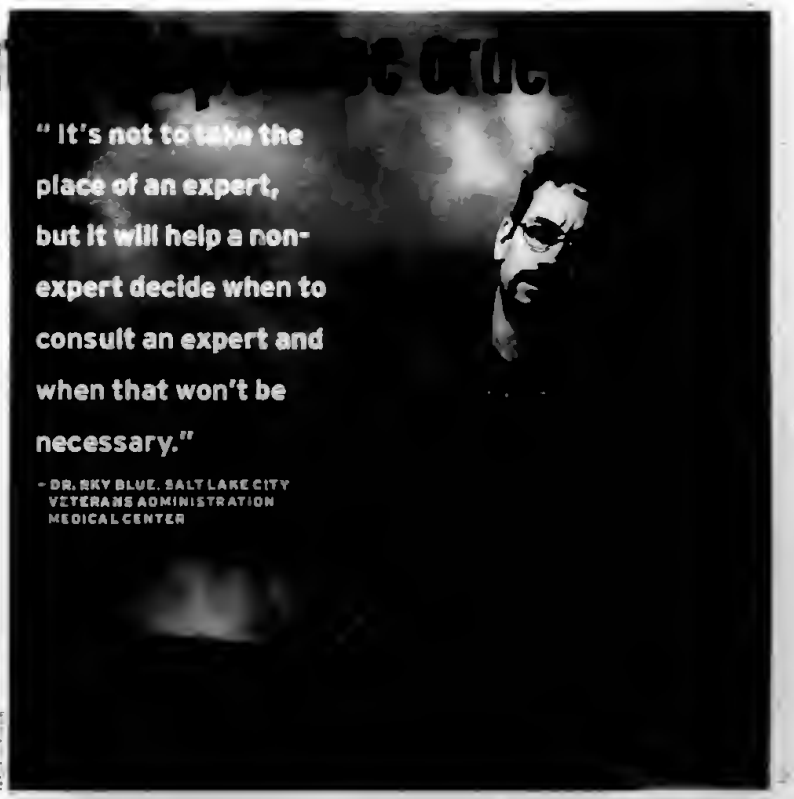
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Datebook



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Java, page 51

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OpenDoc diagnosis

CONTINUED FROM PAGE 47

application building team and a physician investigator at the Salt Lake City Veterans Administration Medical Center, said object technology will also let health care facilities customize their own applications.

"A lot of patients have a physician's assistant seeing them," Blue said. "This will allow a greater number of patients to be seen and cared for. It's not to take the place of an expert, but it will help a nonexpert decide when to consult an expert and when that won't be necessary."

The application, which hospitals will be able to use in examining rooms, would enable doctors, nurses or doctors' assistants to put a patient's health background and symptoms into a PC and receive guidance on tests to run, other symptoms to watch for and possible diagnoses.

To keep the application up-to-date, the group is building it with OpenDoc and JavaBeans components so information systems departments at clinics and hospitals can easily extract and replace chunks of information.

TEAMING UP

OpenDoc is a cross-platform, desktop component architecture spearheaded by IBM, Apple Computer, Inc. and Netscape Communications Corp. JavaBeans is Sun's technology that links Java applets, which generally run over the Internet.

Observers say this is one of the first times application developers have used OpenDoc in conjunction with JavaBeans.

"The potential there is tremendous," said Mike Cohen, vice president of Sheldon I. Dorenfest & Associates, a Chicago-based analyst and research firm specializing in medical information technology.

"It's amazing how much physicians have to carry in their heads. What do they look at? Your fingernails? Your nose? Your feet? This [application] could help make sure routine things aren't overlooked," he said.

Cohen said this medical application, which isn't due on the market for another year, holds a lesson for corporate IS managers. That lesson lies with the application's dependence on object-oriented technology to share and update information.

"It would be easy to package objects and send them around the country from one clinical center to another," Cohen said. "There's something in that for IS to learn."

Jerome Soller, president of CogniTech, a Salt Lake City firm that develops health information systems, and a research instructor at the University of Utah, said he hopes object technology will keep his company from reinventing the wheel.

"We're using objects so we're not required to redesign the system each time a new technology is introduced," Soller said.

Informix bumps HTML

CONTINUED FROM PAGE 47

that Informix will release in December said the database-centric approach should make it easier to build and manage dynamic Web applications. But there is a big caveat, they added: Doing joins within a database can slow performance.

"I think database-generated pages are the wave of the future if vendors can overcome the speed issues," said David Wagner, publishing systems manager at *The Seattle Times*. "Nothing is as fast as flat HTML files, and we're anxious for increased display speeds" from the database.

The newspaper last month launched an arts and entertainment Web site (www.seattletimes.com/datebook) that is generated entirely out of the Illustra object database that Informix bought last year.

Relying on the database "tremendously reduced" coding requirements and lets users do more complex queries than is possible with standard HTML files, according to Wagner.

However, it could take two to three times longer to complete a query that requires several joins than to access an HTML page stored at the Web server, Wagner added. He said Informix's upcoming Universal Server, which combines its relational engine with the Illustra technology, hopefully will speed things up and let the database become a repository for all the graphics, text and ads used by the newspaper.

Jack Look, data designer at the American Medical Association in Chicago, said the association is waiting for Universal Server to become available before it puts all its AMA Physician Select application (www.ama-assn.org) into an Informix database. The text portion of the application is stored in an Informix OnLine relational database now, but the images are still in HTML files, he said.



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SAP answers call for planning tools

CONTINUED FROM PAGE 47

sometime next summer, R/3 Version 4.0 will include supply-chain management component technology developed by I2 Technologies, Inc. in Irving, Texas. The technology is a constraint-based planning engine that alerts users when supplies are getting low based on a preset plan. It also lets companies more accurately predict shipping dates for their products.

Similarly, PeopleSoft, Inc. last month shelled out $219 million to buy Red Pepper Software Co. in San Mateo, Calif., and plans to embed Red Pepper's ResponseAgent planning software in its products.

Preceding this deal was Oracle Corp.'s pact in June to embed ResponseAgent in Oracle's supply-chain management products.

Oracle, the No. 2 vendor in the field, is still working with Red Pepper and plans to release an integrated product by year's end. Oracle officials admit the relationship has "cooled" since its competitor took over Red Pepper.

Companies such as Baldor Electric Co. in Fort Smith, Ark., are driving the trend toward embedded features. The $500 million maker of industrial electrical motors just signed a deal to install SAP R/3 Version 3.0 across its enterprise and I2 Technologies' Rhythm CBP, the standalone version of the supply planner SAP is embedding.

"Originally what attracted us to a planning engine was our goal to reduce lead time. We want to put ourselves in the position of giving a customer a 90% accurate shipping time while they are on the telephone," said Marty Stanhibel, Baldor's manager of manufacturing systems.

JOINING TOGETHER

Stanhibel said a selling point for both products was the promise that they would be joined in future releases. Baldor wants to beta-test SAP 4.0, which will include the integration.

"It's a positive thing for users," said Barry Wilderman, an applications analyst at Meta Group, Inc. in Stamford, Conn. "This really says SAP recognizes it's not going to build everything itself," and the vendor's willingness to add to the core business functions of R/3 is a boon for users, he said.

Java suites

CONTINUED FROM PAGE 47

that will run on network computers, according to industry watchers.

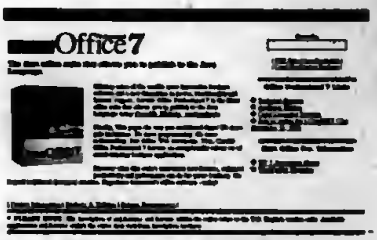
Here are the most compelling reasons:

- Java provides an attractive method for software developers to create platform-independent applications, reducing the engineering and financial resources needed to create platform-specific software versions.
- Most potential network computer users are in the business market and want productivity applications.

Corel is set to release Corel Office for Java early next year. Rival developer Lotus has announced its intention to deliver a Java-enabled suite by the end of the year. And Cooper & Peters, Inc., a software developer in Denver, is expected to deliver a suite of Java applets in the first quarter of 1997.

Although the Cooper & Peters suite, called EyeOpener, isn't a full-fledged suite of applications, it provides Java applets that can be embedded into other applications. The tact is similar to what Lotus offers with its Notes components.

One information systems director at a large insurance firm on the East Coast, who asked not to be identified, said Java suites will make it easier for his field personnel to perform more functions using mobile devices. "Our mobile users will get similar functionality to those using a desktop PC. That should make them more productive," he said.



Corel's Office Professional vies for second place in the desktop suites market

But not all suites users are interested in Java suites. Chris Gould, IS coordinator at Farrell Distributing Corp., a beverage distributor in South Burlington, Vt., that uses Microsoft Office, said, "Microsoft is evolving Office to include and embrace the Internet without us having to know a lot about it. But we are not overly concerned in the Java area."



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FRANKLY SPEAKING

Vendors drag feet on Java for Win 3.1

FRANK HAYES

IT'S READY. It works. You need it.

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"It" is the long-awaited version of Netscape's Navigator that will let Windows 3.1 users run Java.

If you want to use Java for enterprisewide applications, you need "WinJava" — an interpreter that will run Java code on the acres of 16-bit Windows 3.1 machines that are still planted in nearly every large organization. You need Netscape's version or the similar ones that come from IBM and Microsoft. And you need to start looking at it soon to see whether Java applications will run fast enough on your company's aging PCs.

There's just one problem. Netscape, the company that set the standard for free, public beta testing of World Wide Web technology, is making the WinJava beta available only to developers who participate in the company's DevEdge program.

IBM's alpha release of WinJava has been publicly available since August, but it's painfully slow and will require lots of fine-tuning before it's ready for prime time. Microsoft's WinJava currently is just a demonstration, but it's slated for beta release sometime before New Year's Day.

Crazy as it sounds, the one release of Java that corporate developers really need to get their hands on is the one vendors can't seem to get out the door.



For any corporate MIS shop that's seriously considering using Java for client/server applications, testing Java on Windows 3.1 should be a high priority. That's because corporate PCs that run 16-bit Windows are likely to be older, slower machines. Often, they haven't been upgraded to Windows 95 or Windows NT because they *can't* be — they just don't have the speed.

Will those antiques have the horsepower to run Java? Maybe. After all, many have been running Visual Basic or PowerBuilder applications for years. Those visual development systems use interpreted code — a lot like Java's bytecode.

Java runs at a pretty snappy pace for an interpreted language. But it's still a lot slower than native code. On a 100-MHz Pentium with 16M bytes of memory, that's not so noticeable. On a typical 486 — or an aging 386 — it's more of a drag.

And if those older PCs aren't fast enough, IS managers will have to make a tough choice: upgrade to faster hardware that can handle Java or dump the idea of using Java for enterprisewide applications.

Either way, corporate developers need to test WinJava now so they can make plans. Foot-dragging by Netscape, IBM and Microsoft doesn't help.

Incidentally, there's one other way to run Java applications on older PCs. It's technically possible to run the JavaOS operating system, which was designed for network computers, on IBM-compatible PCs instead of Windows or DOS.

According to the techies who created JavaOS, it runs Java programs much faster than Java implementations that share the hardware with a regular operating system such as Windows 95 or NT. And JavaOS has already been ported to run on Intel chips. A JavaOS tailored for PCs would effectively turn those aging boxes into Java terminals.

But JavaSoft's parent, Sun Microsystems, also makes Java network computers. And guess who has no plans to offer JavaOS for PCs?

Hayes is Computerworld's staff columnist.



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Microsoft fears network computers

With Microsoft facing competition in its core desktop market from network computers, the company has been scrambling to address user concerns about Windows' flexibility and cost of ownership. Microsoft Executive Vice President Steve Ballmer recently talked with Computerworld *Editor Paul Gillin about Microsoft's NetPC initiative, the threat of network computers and the future of Windows.*

CW: Are you afraid of network computers?

BALLMER: Yes. There's something in [network computers and] Java that customers like, which is the deployment flexibility. You can move what you want to the client and leave the rest on the server. We need to improve our operating system to address that.

The [network computer] also brings two new operating system competitors. Sun has JavaOS. Oracle has its own operating system. And Netscape wants to run on top of lots of operating systems. Are we afraid of operating system competitors? Of course we are.

The NetPC has the option to run everything on the server. [Its] Zero Admin [Windows] makes it much more flexible to make decisions [about where code and data reside]. You can still run Windows programs, but you don't have to abandon all which is good about Windows.

CW: Browsers have become almost a zero-revenue market. Is the browser market still important?

BALLMER: Absolutely. Suppose everybody used Netscape and wrote programs that depend on it. Netscape becomes their basic user interface. So it becomes a lot harder for us to sell upgrades. Netscape would like to do to Windows what Windows did to DOS. Windows killed DOS.



CW: Explain clearly what will happen with Windows NT and Windows 95 convergence.

BALLMER: For the next several years, we will enhance both systems. NT Workstation is a superset of 95 today, and there will be things added to it that don't get added to 95. At some point, there will be no demand [for Windows 95]. At that point, we will just have NT Workstation. So they don't get crashed together.

> "Netscape would like to do to Windows what Windows did to DOS. Windows killed DOS."
> – Steve Ballmer, Executive vice president, Microsoft

CW: Is there going to be a common kernel?

BALLMER: I think we'll have a version of 95 that shares the same device drivers next year, but that doesn't mean a common kernel. [Microsoft Group Vice President] Paul Maritz would like to do a release after that in which there was a common kernel. But at some point, we're going to tell people to go to NT Workstation.

CW: Will this happen in a five-year time frame? Ten years?

BALLMER: Five-ish.

CW: NT is currently behind in some key feature areas such as Plug and Play and power management support. Will it catch up to Windows 95?

BALLMER: NT will catch up [in NT 5.0], and 95 won't get ahead again.

CW: What will you do with software licensing to accommodate the network computer?

BALLMER: Anybody can be server-based, but we don't give you a price break for running off the server. We don't plan to offer that.

CW: The next version of Internet Explorer will change the Windows 95 user interface to use a browser metaphor. What about information technology organizations that may suddenly find themselves supporting three different user interfaces?

BALLMER: First of all, you don't have to use the browser interface if you don't want to. There are two camps of customers: those who will manage three interfaces — and we'll help by investing in the help desk and user training. You'll have other people who'll want to vigorously go to one interface. There'll be a set of deployment advice and consultation that our partners will help provide.



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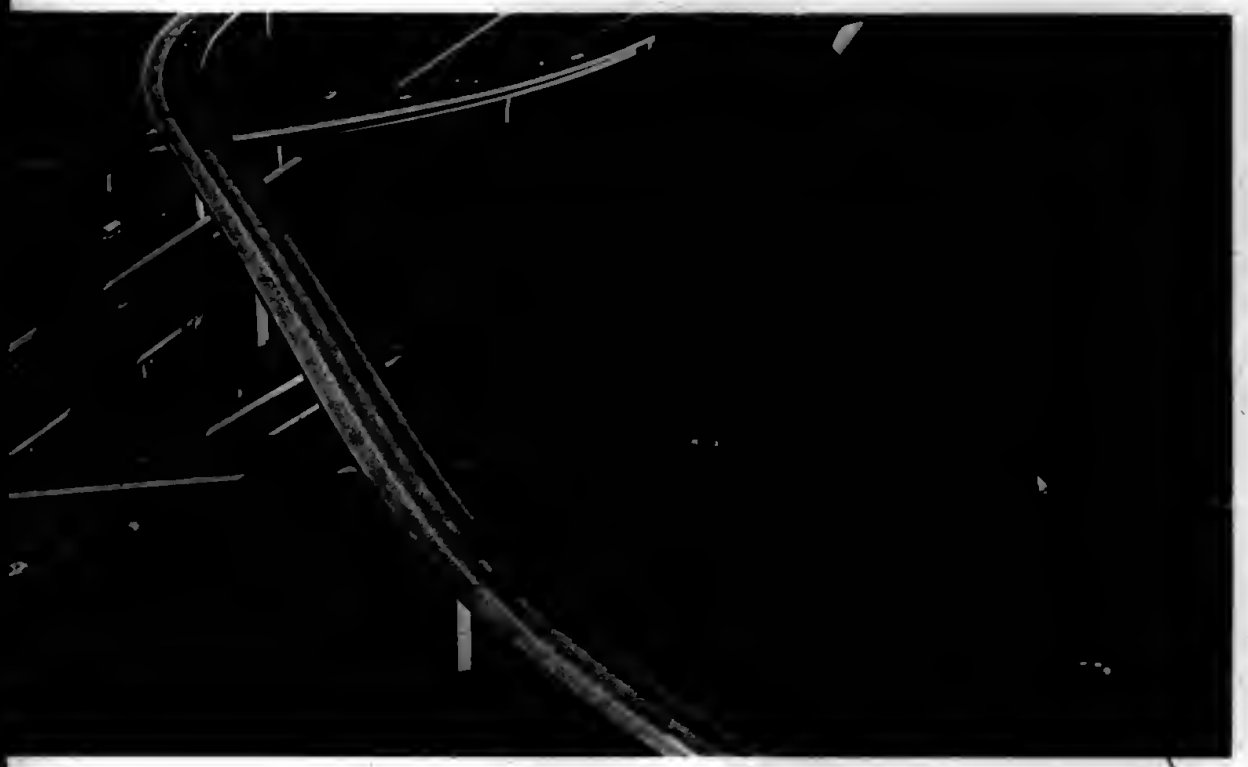


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Source: Creative Networks, Inc., Palo Alto, Calif.

Briefs

Meter tracks NT apps

Network managers will be able to meter software license usage on Microsoft Corp. Windows NT and Novell, Inc. NetWare servers with a tool launched last week by On Technology Corp. in Cambridge, Mass. As with its NetWare predecessor, SoftTrack for Windows NT works entirely from the server, so no software needs to be installed (or possibly disabled by crafty users) on individual PCs. Prices start at $795 for a 25-user server.

MCI boosts backbone

MCI Communications Corp. last week announced it has completed an initiative to quadruple the capacity of its Internet backbone. The upgrade pumps up throughput to OC12 bit/sec. from 155M bit/sec. The move was meant to alleviate network congestion problems that have long plagued the carrier. MCI plans to double its backbone capacity next year.

Managing middleware

Banks & Babbage, Inc. this week revealed out to management software line for their's MQSeries middleware. MQAdmin is configuration software that lets users administer MQSeries across multiple platforms. It rounds out the Command MQ product line, which includes performance tracking and software agent modules. MQAdmin will be available January, starting at $15,000.

Withering Vines

▸ *StreetTalk for NT may be Banyan's last hope*

By Laura DiDio

DAVE MAHONEY'S decision two weeks ago to relinquish the reins as CEO of Banyan Systems, Inc. may be too little change, too late to save the company, observers said.

A dozen users and analysts interviewed by *Computerworld* said Banyan's best — and maybe only — hope for success lies with its unbundled StreetTalk for Windows NT.

Over the past two to three years, Banyan's revenue, market share and technology edge have steadily eroded. Users increasingly choose more mainstream network operating systems — most notably Microsoft Corp.'s Windows NT Server and, to a lesser extent, Novell, Inc.'s NetWare.

Banyan's anemic marketing has been its Achilles' heel. It has failed to increase its user base in recent years, which has made it even harder for the company to attract developers to write applications for its Vines network operating system or StreetTalk directory service. That has made competing with NT and NetWare even more difficult, analysts said.

That has left Banyan and loyal users to pin their hopes on StreetTalk for Windows NT Server, a version of Banyan's directory service for NT.

"StreetTalk for Windows NT is a great product and one of the few

Banyan, page 60

"We liked Vines, but we didn't want to be the last dopes using [it]."

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Former CEO Dave Mahoney is opt[i]tic despite st[r]ategy that "hasn't [been] crisply and [effec]tively focu[sed] and execut[ed]."

Distributing Web traffic

▸ Cisco system spreads hits over several servers

By Bob Wallace

CISCO SYSTEMS, INC. is quietly working on a system that will enable information systems managers to boost performance of their Web sites and cut costs by intelligently distributing traffic among geographically dispersed Web servers.

By applying tried-and-true load-balancing techniques to World Wide Web sites, IS can keep users happy while avoiding the need for some server and bandwidth upgrades.

The Cisco system, called DistributedDirector, is expected to ship early next year. It directs incoming hits to the Web server that can handle them most efficiently.

When Web sites become congested, IS managers typically respond by repeatedly upgrading their servers and adding bandwidth. Both tactics are expensive, and neither makes the site more efficient.

WEB BALANCING

Today's most advanced wide-area network load-balancing

Cisco, page 60

Hughes switch combines frame relay with ATM

By Kim Girard

HUGHES NETWORK SYSTEMS, Inc. is joining the bevy of companies aiming to make it easier and cheaper to use frame relay and ATM in wide-area networks.

The Washington-based network provider recently unveiled the BX5000, a switch designed to handle a carrier's Asynchronous Transfer Mode (ATM) or frame-relay traffic.

That means carriers can use the same box to offer both services, making it easier to migrate users from frame-relay networks to ATM if they need more bandwidth for multimedia services, the vendor said.

The new line is aimed at carriers and users with large enterprise networks who want to reduce the per-port cost of frame-relay services and bring frame relay to areas where volume previously hadn't justified.

Hughes, page 61

HUGHES ADDS COMBO SWITCHES

Product	Price
BX5000 chassis	$26,000
IX500 edge switch	$9,950 (8-port frame-relay module) $4,000 (chassis)
IX200 branch office switch	$9,950 (8-port frame-relay module) $2,200 (chassis)

Distribution tools bolster Microsoft's SMS

By Patrick Dryden

ADMINISTRATORS who complain about shortcomings of Microsoft Corp.'s Systems Management Server (SMS) in maintaining networked PCs can expect to have some new options as other management vendors begin to integrate their tools with SMS.

The Redmond, Wash., vendor's tool kit lacks software metering, a menu/icon system to control users' desktop interfaces and an easy way to distribute software, users said. These add-ons can simplify software distribution by using PC inventory data stored in the SMS database and working with built-in functions such as the software distribution engine.

McAfee Associates, Inc. last week released a revamped version of its SaberTools work-

Tools, page 60

The Enterprise Network

LANs • WANs • Network Management

ANNUAL E-MAIL COSTS PER USER

Lost revenue due to downtime and support:	$2,217
Lost productivity due to downtime and support:	$867
Training and support:	$626
Server Costs:	$675
Desktop client:	$434
Total cost:	$4,819

Source: Creative Networks Inc., Palo Alto, Calif.

Withering Vines

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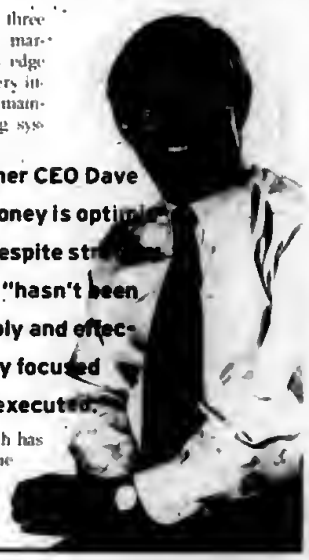
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India's most advanced wide-area network load-balancing

Cisco, page 60

WEB BALANCING

The benefits of distributing traffic among geographically dispersed Web sites

- Cuts WAN costs
- Gives users quicker Web access
- Eliminates single point of failure
- Lets users distribute information sources
- Makes more efficient use of server horsepower

Hughes switch combines frame relay with ATM

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McAfee Associates, Inc. last week released a revamped version of its SaberTools work-

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Tools enhance Microsoft SMS

CONTINUED FROM PAGE 59

group management suite that can link with SMS to help managers control users' desktops, automate software distribution and meter application usage.

Novadigm, Inc. plans next month to release Desired State Manager for SMS, a package that will let managers define policies for the automatic distribution of software and configuration to or for PCs.

"Now I can treat SMS like a platform — other vendors adapt to it, so I can plug in the tools I prefer," said Steve Drohan, project manager of desktop infrastructure at LifeScan, Inc. in Milpitas, Calif.

SYSTEMS MANAGEMENT

To cut support costs, Drohan sought help maintaining a consistent user interface for 1,250 stations throughout the Johnson & Johnson division, which makes blood glucose meters for diabetics. He tested SaberTools SMS because it offers "more mature tools" than SMS.

"McAfee's inventory, metering and distribution tools have years of customer feedback about how to make good reports," Drohan said. "Now that they work with the SMS database, I can do all my managing and reporting from the SMS console and customize reports with standard SQL tools."

McAfee's SaberTools SMS monitors and controls software usage, creates a uniform interface of menus and icons for software distribution, allows administrators to remotely access and reconfigure PCs and automates software distribution using the WinCompare component of the SaberTools suite.

WinCompare lets the manager install an application on one workstation and capture all the resulting configuration changes in a script. Then it generates a Package Definition File that SMS uses to distribute and install the software.

SaberTools is available from McAfee in Santa Clara, Calif., starting at $31 per node for a 100-node network.

SMS AUTOMATOR

Novadigm also focuses on automating software distribution and PC configuration, but it completely takes over the task for SMS operators.

Desired-State Manager for SMS can deploy and change software at thousands of PCs without operator intervention, according to Novadigm in Mahwah, N.J.

The tool is a subset of Novadigm's "continuous configuration" software, which was designed to monitor diverse systems throughout an enterprise network and push the appropriate software and updates to them according to defined policies. The new version focuses on DOS and Windows PCs, working in conjunction with the inventory and distribution functions of SMS.

That combination lets managers set policies for users based on job description, workgroup function or machine type. Then Desired-State Manager for SMS determines which software must go to which stations and schedules the distribution.

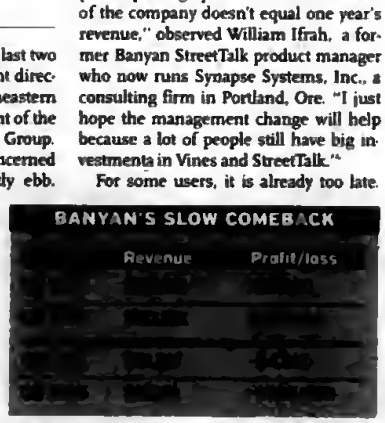
Novadigm expects to ship Desired-State Manager for SMS in December. Pricing begins at $25,000 for a 250-node network.

Banyan relying on StreetTalk

CONTINUED FROM PAGE 59

things Banyan's done right in the last two years," said Bob Whelan, assistant director of network services at Northeastern University in Boston and president of the New England Banyan Users Group. "Without it, I'd be incredibly concerned that the tide would permanently ebb. And even with StreetTalk for Windows NT, Banyan is facing the fight of its life to stay alive."

At its current run rate, Banyan is expected to post revenue just shy of $100 million for fiscal 1996, which ends Dec. 31, compared with its historic high of $150 million in 1993. So far this year, Banyan has posted two losing quarters.



Meanwhile, the company is searching for a CEO from outside the company who can "focus and deliver strongly in the areas of sales and marketing," Mahoney said.

QUITE A MESS

"Any change is welcome at this point. Just look at the mess Mahoney has left the company in: Market share is down to 3%, and the stock is hovering between 3 and 4," said an IS manager at a large defense contractor who requested anonymity.

In the face of continually declining revenue and market share, even many Vines loyalists are skeptical that Banyan can thrive.

"Banyan is imploding, and now the pace is picking up. Wall Street's valuation of the company doesn't equal one year's revenue," observed William Ifrah, a former Banyan StreetTalk product manager who now runs Synapse Systems, Inc., a consulting firm in Portland, Ore. "I just hope the management change will help because a lot of people still have big investments in Vines and StreetTalk."

For some users, it is already too late. Bruce Smith, systems administrator at Logicon Defense Contractors, Inc. in Arlington, Va., said his company decided to look elsewhere 18 months ago because it just couldn't find enough applications being written to support the Vines platform and wasn't confident of Banyan's ability to survive. Logicon chose to migrate to Windows NT Server to support its engineering end users who deploy large databases.

"We liked Vines, but we didn't want to be the last dopes using the product either. We have to think of our own business," Smith said.

Cisco applies load balancing to Web

CONTINUED FROM PAGE 59

technology, the round-robin domain name server (DNS) strategy, links users to servers in a cyclical pattern. The first user to connect to a site is linked to server one, the next user to server two, and so on.

But with that approach, a second user may be sent to a distant server even if a closer server isn't busy, unnecessarily burning up expensive WAN bandwidth.

"There are major WAN cost considerations here that IS managers need to address when distributing servers over large areas," said Tom Plaster, an analyst at Strategic Networks Consulting, Inc. in Rockland, Mass. "You want users connected to the closest server if that server is available."

Round-robin DNS also assumes that all servers are created equal, meaning they have identical power and capabilities. As a result, less powerful servers become overused while larger and more expensive servers are underutilized.

One Cisco customer already using intelligent local load balancing said he sees a need for DistributedDirector.

"As the Internet becomes more of a commercial success, I could see considering the system for a second Web site," said Steve Plastrik, vice president of technical operations at Viacom, Inc.'s Interactive Services unit in New York. The unit's interactive sites include MTV and VH1. "As MTV increases in popularity overseas, we could use it to balance traffic between New York and a data center in Europe."

Cisco's DistributedDirector will use information in existing router tables to direct users to the closest server. That boosts access performance for users and reduces WAN costs.

"This would be very useful for traveling employees who wouldn't have to worry how to connect to the nearest site," said Jim Fey, director of strategic technology at Private Mortgage Insurance Co. in San Francisco.

NOTHING LIKE IT

Analysts said they don't know of any systems similar to DistributedDirector, but they said they expect start-ups to race to what could be a large and lucrative market.

With the package, users need only one uniform resource locator for all their distributed Web servers. That simplifies access and administration.

"Load balancing among remote sites is essentially another telephone company service that's finally being applied to data," Plaster said. "When you have huge groups of people trying to reach you to do business, you don't want a server busy signal."

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COMMENTARY

What would Hamlet do?

PATRICK DRYDEN

NC or NetPC: that is the question.
Whether 'tis nobler in the mind to suffer
The slings and arrows of outrageous users,
Or to take arms against a sea of troubles,
And by opposing end them?

AH, USERS ... you can't live with them, but you can't live without them.

After all, they're the reason your IS group builds and maintains intricate networks, develops wonderful client/server applications and supplies whizzy desktop computers.



But users can wreak havoc on your carefully crafted infrastructure, pulling stunts that range from dumb to devious.

That's why interest is so high in network computers — really just browsers that can run only server-supplied applets — and Microsoft's NetPC. Microsoft's version of the network computer looks like your familiar desktop PC but is diskless, can't be expanded and requires a network connection and server.

The network computer promises to hold down the cost and complexity of managing end-user computing. Analysts at Gartner Group in Stamford, Conn., predict that about 20% of businesses will adopt them by 2000.

Maybe living with users will get easier. Or maybe not; every advantage has at least some downside.

Because users can't open the case, they won't be tempted to pilfer parts or add cards.

At a manufacturer I visited, a techno-Romeo beefed up a secretary's system with multimedia cards so he could send her Michael Bolton music videos over the network.

But IS can't upgrade network computers either. Managers may have to replace the entire system to provide more power or a new feature. And sealed systems aren't easily fixed when one component fails. Recall the 3Station, a 286-based network PC that 3Com launched 10 years ago that soon made a nifty doorstop or plant stand.

Because network computers can't load and run programs locally, all software reverts to central control.

With only servers to update, software managers don't have to run complex distribution programs and then hope the installation worked on target PCs. And "sneakernet" technicians don't have to visit every desktop and disrupt users.

Of course, some applications must be rewritten to a server-based design. Net-centric applications can cause network utilization to jump, just as it has wherever users rely on an intranet or roam the Internet. And net-dependent users will demand uninterrupted access to networks and servers because they won't be able to do much if something breaks.

And because these systems lack a floppy disk drive, users can't bring viruses, games and resumes to work. An insurance company I visited was planning network upgrades to handle rising utilization — that is, until traffic analysis revealed the most active program was one innocuously named "client services." It turned out to be a networked version of the video game "Doom."

But those wily users could still fetch infected programs and unbusinesslike software from the Internet, online services, E-mail and bulletin-board systems. That could force managers to boost surveillance, tighten access privileges, draft usage policies and scan server storage for renamed and compressed files.

Ah, network terminals ... can't live with them, can't live without them.

Dryden is a Computerworld senior editor, network/systems management.

Hot

NC DEBATE

● "A fat PC is a fat PC, and there's nothing you can do to change it. I see Wintel putting a corset around their fat client and cinching it up tight. It's still fat. It just has a real red face."
— Sun Microsystems, Inc. CEO Scott McNealy, taking a shot at Microsoft Corp.'s recently announced NetPC.

● "There are a lot of things the network computer doesn't deal with: personal productivity, collaboration, PC computing, laptops and user independence."
— Steve Ballmer, executive vice president at Microsoft.

● "If somebody took away my notebook computer today, I'd smack them around the head."
— David Gee, IBM's worldwide marketing manager for Java. He noted that the network computer is good for some users but not for everybody. IBM licensed Sun's Java Internet language for its own network computers.

NEW PRODUCTS

ZYXEL COMMUNICATIONS, INC. has announced the Omni TA128 ISDN terminal adapter, a 128K bit/sec. Integrated Services Digital Network (ISDN) modem.

According to the Anaheim, Calif., company, the modem has two serial interfaces, which allow it to be connected as though it were two modems that use one ISDN line. It was designed for high-speed World Wide Web browsing and fast downloading of multimedia and other files.

The Omni TA128 costs $399.

Zyxel Communications
(714) 693-0808
www.zyxel.com

ASCEND COMMUNICATIONS, INC. has announced Max TNT, a wide-area network access switch that can support 2,000 modem users at one time.

According to the Alameda, Calif., company, the Max TNT switch concentrates dial-up and dedicated traffic on a single platform.

It was designed for up to 150 T1 or fractional T1 frame-relay connections on a 14-in. shelf.

Pricing for Max TNT starts at $18,750.

Ascend Communications
(510) 769-6001
www.ascend.com

MICRO DESIGN INTERNATIONAL, INC. has announced a LAN-attach CD-ROM server, CD-Express Connect for Windows NT environments.

According to the Winter Park, Fla., company, the server was designed for distribution of CD-ROM data to LAN and World Wide Web clients.

It requires no other dedicated servers or special drivers.

Pricing for the server starts at $3,895.

Micro Design International
(407) 677-8333
www.mdi.com

TELEPROCESSING PRODUCTS, INC. has announced Opera Opus 1, a wide-area network access system based on the company's Communication Applications Switching System architecture.

According to the Simi Valley, Calif., company, the software-based system helps connect central, regional and branch LAN or intranet locations across WANs.

It allows integration of voice and dats over T1 lines, automatic bandwidth allocation for various applications and remote configuration.

Pricing for Opera Opus 1 starts at $5,000.

TeleProcessing Products
(805) 522-8147

Hughes' new switches combine ATM, frame relay

CONTINUED FROM PAGE 59

installing the service.

The IX line of edge switches uses switched virtual circuit (SVC) technology to create temporary connections on demand for remote sites. SVCs are used instead of permanent virtual circuits, which establish constant connections that are more expensive to create and maintain.

IX switches are aimed at carriers that want to offer access to frame-relay users in areas where there isn't enough demand to justify a large dedicated switch. Products include the IX200, a low-end, branch-office frame-relay switch, and the IX500 switch for a carrier's smaller regional points of presence. Hughes said the IX500 reduces the per-port cost for frame-relay services by 40% and entry-level cost for a frame switch by 70%.

Rafael Conejos, technical director at BT Telecomunicaciones in Madrid, said his company chose the switches for their reliability. The company, which now offers private lines, frame relay and other services, is considering setting up an ATM backbone but isn't sure there is a demand for higher bandwidth.

"Some customers ask for a M bit/sec., but most want 64K bit/sec.," he said. "There is no real demand today for ATM."

To deliver voice and data over SNA networks, LANs, frame relay and ATM, Hughes uses a technique called VPStreaming, which is similar to IP switching and tag switching, said David Passmore, president of Decisys, a consultancy in Sterling, Va. Streaming creates a shortcut for data on a network by eliminating unnecessary routing.

With tag switching from Cisco Systems, Inc. in San Jose, Calif., information read by a router is tagged to avoid network slowdowns. With IP switching from Ipsilon Networks, Inc. in Palo Alto, Calif., each data packet is checked until a pattern is recognized, then data is switched. Although tag and IP switching are proprietary, Hughes' edge switches can operate on any carrier's ATM or frame-relay network, Passmore said.

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Briefs

Web babysitter ships

Microsystems Software, Inc. in Framingham, Mass., last week released a software babysitter for monitoring and blocking employees' Internet use. Cyber Patrol Corporate runs on servers with Windows NT and Novell, Inc.'s NetWare.

CompuServe enhanced

CompuServe Corp. in Columbus, Ohio, last week launched a Private Label Community (PLC) program that will let companies use the CompuServe network to run private areas open only to their customers, suppliers and business partners. The PLC areas will be branded with the sponsor's logo, name and look and feel. CompuServe will compete with private corporate intranets and a similar service offered by America Online, Inc.

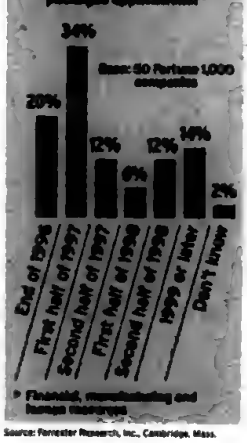
More names

As expected, the Internet Society last week appointed a five-member committee to resolve congestion problems and other issues related to top-level domain names for World Wide Web sites.

The group is likely to add names and suffixes for names to the ones that already exist, such as .com, .net and .org.

UNIVERSAL CLIENT

When do you expect to first implement browser access to your packaged applications?*



* Financial, manufacturing and human resources

Source: Forrester Research, Inc., Cambridge, Mass.

• Version 4.0 beta already deployed at some shops

Newer Navigator

By Kim S. Nash

A FEW SELECT Netscape users recently began installing early beta-test copies of the vendor's next-generation browser, Navigator 4.0.

The rest of the world must wait for a bigger beta test for the general public, which is slated to be released next month.

Navigator 4.0 is part of Netscape Communications Corp.'s $49 Communicator line of World Wide Web-based groupware, electronic-mail and other products intended to compete with Notes and Microsoft Corp.'s Exchange.



REACTION MIXED

Some shops said they eagerly await the final release of Netscape's new products early next year, but other shops said they are in no rush.

US West Communications, Inc. has already rolled out the early Netscape software to more than 4,000 users. "We consider it production-ready, or we wouldn't be deploying it," said Barbara Bauer, senior director of customer systems development at the telecommunications company in Denver.

US West was among the select users who received Navigator 4.0 and test copies of Netscape's Messenger E-mail package. The company plans to consolidate about 15 E-mail systems and give Netscape Mail to 50,000 users during the next year.

Other users, though they are sizable Netscape sites, aren't as enthused about the vendor's plan to take on E-mail and groupware heavyweights Microsoft and Lotus Development Corp.

Genentech, Inc. in South San Francisco, for example, doesn't plan to install messaging software from Netscape — an E-mail newbie — any time soon, said Gail Katagiri, manager of Web services at the bio-

Navigator, page 66

ENCRYPTION

Push is on for safer standard

By Gary H. Anthes

DEPENDING ON whom you ask, the widely used federal Data Encryption Standard (DES) is either dangerously outdated or good for another decade.

DES, the most commonly used algorithm for data encryption, is nearly two decades old, and cryptographers warn that it may no longer be sound. It is time to move to something stronger, many said.

The National Institute of Standards and Technology (NIST) will soon publish criteria for a DES replacement. That will mark the beginning of a process in which users and vendors will help hash out a new federal en-

DES, page 67

Group scheduler adds NT support, Web access

By Tim Ouellette

CAMPBELL SERVICES, INC. is hitching its group scheduling product to two rising stars among user sites: Windows NT Server and the World Wide Web.

OnTime 4.0, the Southfield, Mich., firm's new group scheduler, runs on Windows NT servers and requires only a TCP/IP connection to carry data to any desktop. That means users can access their calendars and create or edit appointments from anywhere using a Web browser.

"This way, users can still see their agenda when they are in Hong Kong."

– Pietro Brossi, Union Bank

"We plan to use Web browsers to access OnTime data because we have a lot of people traveling who might not have an OnTime-specific client," said Pietro Brossi, vice president of system administration at Union Bank in Zurich. "This way, users can still see their agenda when they are in Hong Kong."

OnTime data can also be sent via electronic-mail using any Simple Mail Transfer Protocol-compatible package.

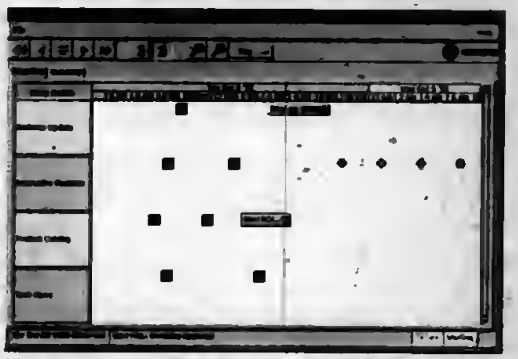
The release from Campbell (which was acquired in April by FTP Software, Inc. in Andover, Mass.) comes just as Lotus Development Corp. prepares to add integrated calendaring and scheduling features to Notes.

That will help Notes shops, but companies such as Union Bank that have mixed environments might want a calendaring package based on TCP/IP so anyone can access the data.

Campbell, page 67

What's the story?

▸ *High-end tool helps create Web magazine sites*



Vignette's package lets users schedule material to be posted

By Mitch Wagner

VIGNETTE CORP. in January plans to begin shipping a high-end software package for building and managing very large, rapidly changing Web sites.

The software was designed to create and manage news and magazine sites on the World Wide Web, said Ross Garber, president and CEO of Vignette in Austin, Texas.

The software is based on technology that was developed to run the popular CNet, Inc. site (www.cnet.com), which in-

Vignette, page 66

Vignette package

CONTINUED FROM PAGE 65

cludes news and feature articles about Internet technology.

"The Vignette product understands the editorial process," said Joel Truher, director of engineering at the HotWired subsidiary of Wired Ventures, Inc. in San Francisco (www.hotwired.com). "It gives each person a good idea of what they're supposed to do and when they're supposed to do it."

The software creates separate storage areas for content such as text, images and multimedia files and for information about presentation such as Hypertext Markup Language templates and back-end programs.

As a result, it lets business managers, writers and artists focus on creating content while information systems managers focus on the technology and presentation.

Ira Machefsky, an analyst at Giga Information Group in Santa Clara, Calif., applauded the product. "By virtue of the separation of content from presentation, it lets specialists concentrate on what they do best," he said. "It seems like a neat piece of technology that could let complex Web sites be built and maintained by a small number of people."

The Vignette software is one of a few products used for collaboration in building big, complex Web sites. Microsoft Corp.'s Internet Studio, in conjunction with its FrontPage Web site development tools, has similar capabilities.

WHAT IT INCLUDES

The Vignette package consists of two products that can be run separately or in tandem. StoryBuilder is a workflow manager designed to let content creators and IS managers work together to manage Web sites. StoryServer is a specialized server for delivering large, rapidly changing Web sites.

Both packages are accessed using Java applets that can be downloaded on the fly and run in any Java-enabled browser.

A writer or artist builds text, image and roultimedia files using their favorite tools and uses StoryBuilder to combine the component files in multimedia "stories."

Finished stories are automatically passed to an editor, who can make changes, send the story back to the writer or clear it to be posted.

A webmaster has an overview of the entire process and can schedule individual stories to be viewed only at particular times. The webmaster can also see where each story sits in the process.

StoryBuilder can work with any standard Web server, but it was designed specifically for StoryServer. The server software runs on Sun Microsystems, Inc.'s Solaris operating system. StoryBuilder and StoryServer are available and cost $9,500 each for up to 10-user licenses. Pricing is higher for a greater number of users.

Newer Navigator

CONTINUED FROM PAGE 65

technology company.

Genentech last year rolled out a 2,500-user E-mail network, using Z-Mail from NetManage, Inc. in Cupertino, Calif.

"So we are loath to take an immediate plunge into Netscape Mail," Katagiri said. Genentech's commitment to Netscape products is strategic, she explained, and doesn't supersede other projects.

"Employees have told us E-mail is much more critical to their daily lives than a browser is," she said.

Eli Lilly & Co. in Indianapolis runs a 16,500-user intranet using Netscape servers and browsers. But the pharmaceutical company prefers to use Notes for its groupware applications.

The competing products aren't routually exclusive, especially now that Lotus supports Internet protocols, said John Swartzendruber, a technical manager at Eli Lilly's Internet services group.

In fact, users have more options, Swartzendruber said, because any Web browser, including Netscape's, can serve as a front end to Lotus' back-end Domino server.

Swartzendruber said he likes that combination partly because Netscape Communicator takes up less memory than Lotus' client package.

"We've always maintained that groupware from Lotus and technology from Netscape is not an either/or thing," Swartzendruber said. "It's good to see that we didn't pick wrong."

NEW PRODUCTS

REPOSITORY TECHNOLOGIES, INC. has announced WebFirst, software for the CustomerFirst system for customer service, defect tracking and problem resolution on the World Wide Web.

According to the Woodridge, Ill., company, WebFirst provides access via standard browsers to the information stored in CustomerFirst databases. Companies can extend database access to customers, partners and prospects outside the enterprise.

The product also includes security measures to ensure that unauthorized users don't gain access to confidential information.

Pricing starts at $5,000 for 100 customers.

Repository Technologies
(617) 270-9310

SILKNET SOFTWARE, INC. has announced Silknet ServiceDesk, customer interaction software to let companies increase contact with customers.

Officials at the Manchester, N.H., company said with Silknet ServiceDesk, a company's customers can use a World Wide Web browser to find answers to questions or request electronic-mail responses. If there is no answer in the problem-resolution database, ServiceDesk deciphers the nature of the problem and routes the questions to the best-qualified support person. Answers can then be provided by document-sharing or other technologies.

Silknet ServiceDesk is written in C++ and J++ around Microsoft Corp.'s ActiveX Server.

License fees start at $40,000.

Silknet Software
(603) 625-0070
www.silknet.com

www.microsoft.com /office/97/takea

DES

CONTINUED FROM PAGE 65

cryption standard in time to replace DES before the NIST's certification of the DES algorithm expires in 1998.

No group of encryption users has more at stake in DES than financial institutions, which use DES-based hardware and software in millions of automated-teller machines, point-of-sale devices and computers that do funds transfers.

"We've been using DES for 17 years, and it has served us well, and it still works well," said Kawika Daguio, regulatory and trust affairs specialist at the American Bankers Association (ABA) in Washington. "But we are ready to move up."

But bankers are ambivalent about the venerable DES algorithm. Although no one is known to have broken DES encryption, a panel of cryptographers said in January that DES' 56-bit key lengths are subject to "brute force" attack by supercomputers [CW, Feb. 12]. The panel said key lengths of at least 75 bits are needed today.

Each additional bit doubles encryption strength by doubling the number of bit combinations that must be tried in key-guessing schemes used in brute force attacks.

But concern among bankers about the high cost of moving to a new encryption method prompted the ABA to ask the NIST to leave DES as it is and recertify it for another 10 years.

"Banks are trading off cost vs. security," said Lynn McNulty, a former NIST security specialist. "For example, 56 bits may be good enough to protect credit-card numbers but not good enough to protect a $4 billion funds transfer."

BE PREPARED

Banks should be planning now to move to something stronger than DES, said Harold Deal, a vice president at NationsBank Corp. in Charlotte, N.C. In the meantime, "we are going to use whatever we think is best," he said. Deal is chairman of the American National Standards Institute's (ANSI) X9 Committee on Financial Services, which recently developed a standard for an encryption technique called triple DES. It doubles the DES encryption-key length, making encrypted data vastly more difficult to crack.

The triple DES standard will be voted on soon and is likely to be approved by ANSI, said committee member Sandra M. Lambert.

Until recently Lambert was vice president for information security at Citicorp in New York and is now a computer security consultant at Lambert & Associates in Los Angeles.

ANSI approval would encourage the development of triple DES-compliant products and a move by at least some banks to the stronger encryption, Lambert said.

Algorithms not the whole story

When it comes to encryption, the algorithm chosen is just one of several important considerations, experts said.

For example, users who change encryption keys frequently will enjoy more security than those who don't, said Sandra M. Lambert, a computer security consultant at Lambert & Associates.

"With security, the weak link is always the people," said Harold Deal, a vice president at NationsBank. "There's more and more insider collusion going on. You could have a flawless algorithm and security system and still have it compromised if you haven't educated your employees."

In a recent post to the Internet newsgroup Risks Forum (comp.risks), cryptographer Bruce Schneier said, "Strong cryptography can withstand targeted attacks up to a point — the point at which it becomes easier to get the information some other way."

— Gary H. Anthes

Campbell

CONTINUED FROM PAGE 65

Campbell also included a feature that lets Windows NT Notes servers replicate OnTime data at the same time that they replicate Notes databases.

Campbell is going full force with this NT offering, but the TCP/IP support gives the company more options to attach to the system. Users previously could run OnTime across only Banyan Systems, Inc.'s Vines servers or Novell, Inc.'s NetWare.

For example, the addition of TCP/IP connectivity and browser access frees Union Bank from the need to standardize on one calendar software or personal information manager.

"Up to now, we didn't have a tool to schedule across the continent," Brossi said.

Even with Notes and Microsoft Corp.'s Schedule +, the products don't talk to one another, and Notes' new calendaring features aren't compatible with all the existing Lotus Organizer users out there, he added.

OnTime 4.0 runs as a Windows NT integrated service, which simplifies administration and lets administrators simply add that service to other Windows NT server when scaling up the system.

OnTime 4.0 costs $56 per user for 100 users.

Hot

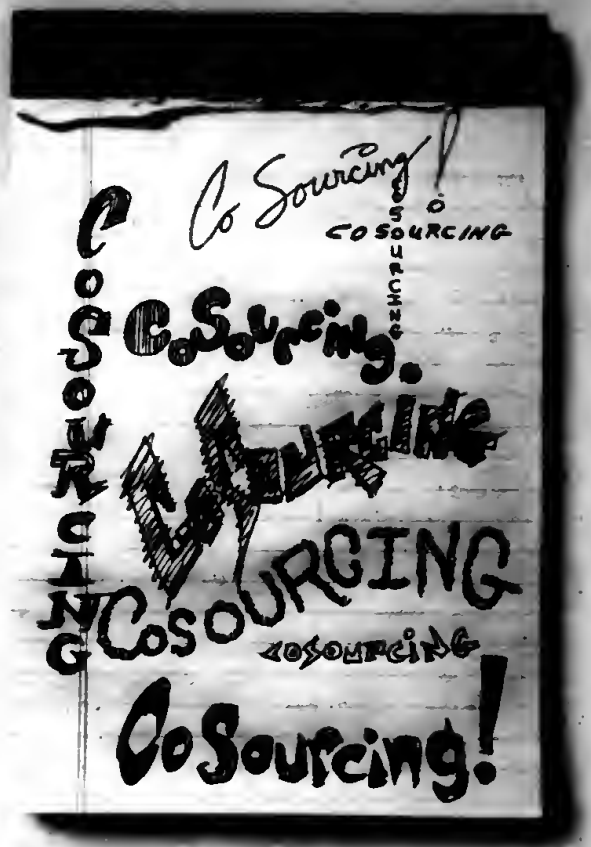
- **Showtime's MTyson.com six-server World Wide Web site took a few hits during the Tyson-Holyfield fight this month.**
- **Peak: 320,000 hits in the 15 minutes after midnight, when the fight began.**
- **Before the uniform resource locator was displayed to pay-per-view customers: 3,000 hits/min.**
- **After the URL was displayed: 170,000 hits in one minute.**

peek/



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Center in last Tera

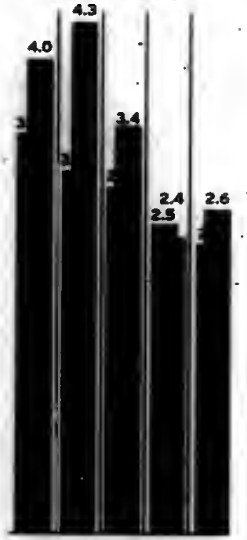
The first customer of Tera Computer Co.'s Multi-Threaded Architecture (MTA) supercomputing system will be the San Diego Supercomputer Center. The center expects to get the computer in a few months and will have about two years to evaluate it. According to Tera, the MTA's shared-memory feature eliminates "memory latency" problems, the time a processor has to wait for memory. The computer's multiple "threads" also speed performance.

Laptop conferencing

Toshiba America Information Systems, Inc.'s Noteworthy Business Video Phone, which allows videoconferencing from a notebook computer via standard telephone lines, will be available in January. It will cost $499. It includes Intel Corp.'s ProShare technology to provide videoconferencing to Toshiba Tecra 510 portable users.

FANTASY VS. REALITY

How would you rate the actual benefits of outsourcing* vs. what you expected? (1 is low; 5 is high)



Source: Deloitte & Touche Consulting Group, Boston

Some contracts share pain, gains

By Thomas Hoffman

SOME OF THE latest — and some say most innovative — outsourcing contract agreements have involved what are called shared risk/shared reward schemes.

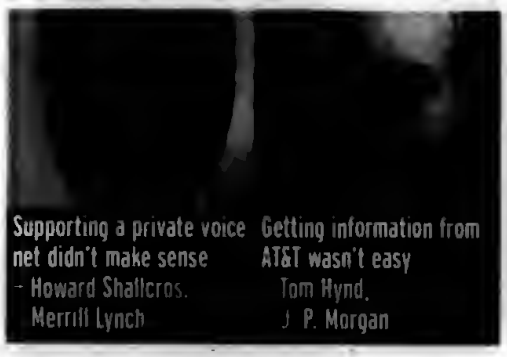
Under these models, an outsourcing vendor might agree to take a cut of a user company's revenue as part of its payment if the vendor developed an application to help the user reach new customers, for example.

BP Exploration worked out a shared risk/shared rewards deal with Andersen Consulting under a 10-year, $120 million financial administrative services deal it tendered last March. Under the contract, Andersen and BP set cost targets for Andersen to run BP's five U.S. businesses.

CLOSER LOOK

If Andersen beats the target, both companies share the cost savings. If Andersen goes over budget, both companies share in the cost over-

Risk/reward, page 70



Supporting a private voice net didn't make sense
– Howard Shallcross, Merrill Lynch

Getting information from AT&T wasn't easy
– Tom Hynd, J. P. Morgan

Flex-sourcing

▸ *Rigid outsourcing deal structures are history*

By Thomas Hoffman

REMEMBER THOSE fixed-rate, 10-year outsourcing deals that stole headlines in the early 1990s?

They're history. Flexibility is the new buzzword in outsourcing, for several reasons. Customers must be able to change contracts on the fly to meet changing business and technology needs. They want vendors to meet defined performance targets.

And customers want vendors to have "some skin in the game," said Stephen Marcus, vice president of services sales support at CompuCom Systems, Inc., an integrator in Dallas.

Unanticipated external factors, such as soft business conditions in Europe or the sale of key business assets, can disrupt the scope of an outsourcing agreement. And technological upheavals, such as the concept of thin-client computing, will probably have a dramatic effect on desktop outsourcing contracts because service levels for servers and desktops will have to be reassessed and reconfigured, said George Logemann, an analyst at The Yankee Group in Boston.

NEW ENVIRONMENT

Those factors played crucial roles in Merrill Lynch & Co.'s decision last May to pay someone else to run its U.S.-based networking operations for voice and data. Merrill Lynch's hiring of AT&T Solutions as an outsourcer had as much to do with the changing business environment as it did with its own systems, said Howard Shallcross, a senior vice president at Merrill Lynch in New York.

With telecommunications industry deregulation pulling down long-distance prices, it didn't make sense for Merrill Lynch to continue to support a private voice network, Shallcross said.

Outsourcing, page 70

Illinois drivers pay fees at mall kiosks

By Matt Hamblen

IN ILLINOIS, drivers can walk up to a kiosk in some grocery stores, touch a computer screen when prompted and pay by credit card for automobile registration renewals.

IBM and state officials on Oct. 29 introduced 10 Service Onsite kiosks at malls and grocery stores across the state.

Any of the state's 6 million registered car owners can use a credit card to pay fees owed to the state, plus a surcharge to defray IBM's development and maintenance costs. For example, an annual state car registration costs $48, plus $3 for the kiosk service.

A recorded voice gives instructions in English or Spanish, and users provide input by touching the screen. For privacy, users can use a telephone handset to hear the commands.

IBM and state officials spent about 15 months developing the system using existing touch-screen concepts. They had to decide which languages to use, which services to provide and how many registration stickers to supply in each machine.



IBM plans to market the car registration kiosks in other states besides Illinois

A state official said the machines may prove most useful to drivers who are running late in paying for a registration renewal or want to avoid lines at the 136 state facilities that offer the same services.

In the agreement between IBM and the state, Illinois will spend $200,000 during the first year on advertising, mainly to publicize the services and the kiosks' locations.

IBM has assumed all development and maintenance costs. The fees aren't expected to cover those costs, but IBM plans to market the kiosks in other states, an IBM spokesman said.

Each IBM RS/6000 SP machine costs up to $40,000, not including the costs of development, said Kathy Riemer, an IBM spokeswoman. The system is maintained by IBM's Advantis division.

If the kiosks prove popular, Illinois may expand use of the machines as an alternative to visiting a state driver service facility, a state spokesman said.

Some help for moving the help desk

QUARTERDECK CORP.'S move of its help desk operation Nov. 2-5 frustrated some users when support lines were still down Nov. 4.

Help desk consultant Patrick Bultema offers advice about moving telephone-based support operations:

- Explain your moving scenario to the person at your phone company who handles Call Center Services.
- Test out new phone lines before the switchover date.
- Ask for a representative to be on-site when the switchover takes place.
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Utility sees productivity rise with wireless data program



By Mindy Blodgett

WHEN BOSTON EDISON Co. began a wireless data communications pilot program last December, its main goal was to eliminate paper.

Instead, the utility discovered that the primary benefit was a rise in productivity, said Gerald Mata, project manager for the Boston utility.



Mata said the utility had forecast a 32% increase in productivity to be gained by switching paper-based repair and order dispatching to Norand Corp 6600 portable computers on the RAM Mobile Data wireless data network. The actual productivity boost the utility realized reached 100% to 200%, Mata said.

"We went from taking care of about 10 paper orders a day to 20 to 30 paper orders a day," Mata said. "Eliminating paper has become more of a side issue."

The wireless data communications system, which was fully implemented in April, has improved productivity for 120 field representatives in several ways, Mata said.

Benefits include automated vehicle location and dispatching, accelerated field stock replenishment and the elimination of the time-consuming process of filling out paper forms, Mata said. He declined to say how much Boston Edison spent on the project.

NOT ALONE

Boston Edison's experience is similar to that of other utilities and industries with large field service organizations, according to Phillip Redman, an analyst at The Yankee Group in Boston.

"By being able to access information remotely and wirelessly, a field service technician can look at information in much less time than it takes to drive back to headquarters and pick up a paper," Redman said. "And two and three people can look at the information at the same time. It really speeds up the processes."

Mata advises companies considering a wireless data system rollout to do the following:

- Get user participation early in the device selection process to ensure cooperation.
- Analyze system interfaces carefully because there are no such things as off-the-shelf programs.
- Conduct a pilot program before full implementation and do a "measured" rollout to a few users per day.

Outsourcing becomes more flexible

CONTINUED FROM PAGE 69

Plus, Merrill Lynch wanted to tap a company with more networking expertise than its own to build a 100M bit/sec. Fast Ethernet frame-relay network to support its retail business. "We would never be able to maintain the economies of scale that the telecom carriers could," Shallcross said.

Aside from leveraging the core competency of an outsourcer, user companies want to know exactly what they are getting for their money. And they want to hold vendors accountable to pledged service levels.

GUARANTEED PERFORMANCE

In response to such concerns, NetSolve, Inc., a network management vendor in Austin, Texas, guarantees its network performance levels with customers and refunds 100% of a given month's fees if it falls short, said Michael Turner, vice president of marketing at NetSolve. NetSolve had to refund its October fees to Entergy Corp. in New Orleans after failing to meet its promised performance levels for the utility.

Besides leveraging outsourcers' core competencies, users want to know what they are getting for their money. And they want to hold vendors accountable.

But NetSolve's precondition isn't the rule. And when the landscape changes, outsourcing customers often find that it is too expensive and painstaking to reopen outsourcing contracts and rework them.

When Xerox Corp. inked a $3.2 billion legacy application maintenance outsourcing agreement with Electronic Data Systems Corp. in 1994, Xerox had just 2,000 worldwide PCs.

Having since rolled out 50,000 desktops and 700 Novell, Inc. LAN servers to its worldwide locations, Xerox recently expanded the scope of the agreement to cover desktop management, said Jagdish Dalal, a former Xerox executive who oversaw the EDS pact until this month. Dalal now runs Price Waterhouse's business process outsourcing unit.

Amending an outsourcing pact "is an arduous process," Dalal said. With no benchmarks for desktop support available to Xerox, it took more than a year to renegotiate its pact with EDS, he said.

Many companies are installing escape clauses in contracts where once there were none. Geared Systems, Inc. worked a termination clause into its five-year legacy systems maintenance/new system development pact with System Management Specialists (SMS) in Santa Ana, Calif. The clause lets Geared Systems kill the deal within six months.

RELIEF RESOURCES

More important, the August deal also lets the aircraft parts maker in Park City, Utah, tap a "bank" of SMS developers without affecting the financial terms of the agreement, said Ken Kreider, director of finance and administration at Geared Systems. As a $50 million company trying to downsize in the wake of defense spending cuts, Geared Systems finds that outsourcing "enables us to keep those resources in the bullpen," Kreider said.

One exception to these trends has been J. P. Morgan & Co., which in May formed a partnership with four vendors led by Computer Sciences Corp. to manage one-third of its information systems operations.

The biggest benefit of the deal has been Morgan's ability to access product development plans directly from vendors that are now its partners, said Tom Hynd, a vice president at the New York bank. "AT&T is difficult to maneuver through to get information. Now it's easier, given the size and magnitude of our relationship," Hynd said.

Contract after-care

A consultant's offer to provide third-party "after-care" to outsourcing and systems integration contracts is creating some turbulence among users and vendors.

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TBI has already provided its services to a large health maintenance organization, said Stanley J. Goldman, the company's president and CEO.

"Vendors are scared of it," Goldman said, because their up-front marketing and infrastructure costs with a client are typically paid off in the last 30 months of a long-term deal.

Some users are also wary of the concept.

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Mark L. Gordon, an outsourcing lawyer at Gordon & Glickson in Chicago, said most outsourcing vendors believe they already have close relationships with their clients, so having an intermediary come between them isn't something vendors would welcome.

"There's still a great deal of pressure to maintain that [contract administration] internally," Gordon said.

But some vendors said a third-party contract administrator could make sense for clients, "particularly if they have multiple outsourced areas that have to be governed," said Stephen Marcus, vice president of sales service support at CompuCom Systems.

— Thomas Hoffman

Risk/reward

CONTINUED FROM PAGE 69

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A similar arrangement for British Petroleum PLC (BP) in the U.K. has been very successful. BP restructured a 1991 outsourcing deal with Andersen last year that covers BP Exploration's accounting activities in the North Sea.

Under the 18-month-old shared risk agreement, Andersen has reduced BP's business process costs by 20%.

Eilles estimates that from 1991 to 1999, Andersen will have reduced BP's business process costs by 50% while handling a 50% increase in activity for those units.

Winter's Hot Happenings
Our choice for the must-attend IT conferences for January and February. Page 74

Managing

COMING TOGETHER



You have a project, and you need input from your users – not an easy task. But getting them involved doesn't have to be difficult.

CONTINUED FROM PAGE 3

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Users "are the most innocent people involved," contends Patrick Nolan, a principal at View-Tech, Inc., a systems integrator in Saratoga, Calif., who is an 18-year industry veteran. "They have this fear factor that goes on. It is almost impossible for them to understand the scope of what is happening, so they feel helpless ... and act out of self-preservation."

How can you get users on board, keep them happy, quell their fears and make their involvement productive for both sides?

Here are some suggestions from users:

Coming together, page 72

By Natalie Engler

NICK CARBULUCCHIO

Utility sees productivity rise with wireless data program

By Mindy Blodgett

WITH BOSTON EDISON Co. began a wireless data communications pilot program last December, its main goal was to eliminate paper.

Instead, the utility discovered that the primary benefit was a rise in productivity, said Gerald Mata, project manager for the Boston utility.

Mata said the utility had forecast a 12% increase in productivity to be gained by switching paper-based repair and order dispatching to Norand Corp. 6600 portable computers on the RAM Mobile Data wireless data network. The actual productivity boost the utility realized reached 100% to 200%, Mata said.

A Yankee Group survey of 100 Fortune 1,000 firms shows that a desire for better customer service and productivity prompted most wireless data communications programs.

We went from taking care of about 10 paper orders a day to 20 to 40 paper orders a day," Mata said. "Eliminating paper has become more of a side issue."

The wireless data communications system, which was fully implemented in April, has improved productivity for 120 field representatives in several ways, Mata said.

Benefits include automated vehicle location and dispatching, accelerated field stock replenishment and the elimination of the time-consuming process of filling out paper forms, Mata said. He declined to say how much Boston Edison spent on the project.



Gerald Mata, project manager at Boston Edison, uses a Norand portable computer to access the utility's wireless data communications network.

NOT ALONE

Boston Edison's experience is similar to that of other utilities and industries with large field service organizations, according to Phillip Redman, an analyst at The Yankee Group in Boston.

"By being able to access information remotely and wirelessly, a field service technician can look at information in much less time than it takes to drive back to headquarters and pick up a paper," Redman said. "And two and three people can look at the information at the same time. It really speeds up the processes."

Mata advises companies considering a wireless data system rollout to do the following:

- Get user participation early in the device selection process to ensure cooperation.
- Analyze system interfaces carefully because there are no such things as off-the-shelf programs.
- Conduct a pilot program before full implementation and do a "measured" rollout to a few users per day.

Outsourcing becomes more flexible

CONTINUED FROM PAGE 69

Phs, Merrill Lynch wanted to tap a company with more networking expertise than its own to build a 100M bit/sec. Fast Ethernet frame-relay network to support its retail business. "We would never be able to maintain the economies of scale that the telecom carriers could," Shallcross said.

Aside from leveraging the core competency of an outsourcer, user companies want to know exactly what they are getting for their money. And they want to hold vendors accountable to pledged service levels.

GUARANTEED PERFORMANCE

In response to such concerns, NetSolve, Inc., a network management vendor in Austin, Texas, guarantees its network performance levels with customers and refunds 100% of a given month's fees if it falls short, said Michael Turner, vice president of marketing at NetSolve. NetSolve had to refund its October fees to Entergy Corp. in New Orleans after failing to meet its promised performance levels for the utility.

Besides leveraging outsourcers' core competencies, users want to know what they are getting for their money. And they want to hold vendors accountable.

But NetSolve's precondition isn't the rule. And when the landscape changes, outsourcing customers often find that it is too expensive and painstaking to reopen outsourcing contracts and rework them.

When Xerox Corp. inked a $3.2 billion legacy application maintenance outsourcing agreement with Electronic Data Systems Corp. in 1994, Xerox had just 2,000 worldwide PCs.

Having since rolled out 50,000 desktops and 700 NetWell, Inc. LAN servers to its worldwide locations, Xerox recently expanded the scope of the agreement to cover desktop management, said Jagdish Dalal, a former Xerox executive who oversaw the EDS pact until this month. Dalal now runs Price Waterhouse's business process outsourcing unit.

Amending an outsourcing pact "is an arduous process," Dalal said. With no benchmarks for desktop support available to Xerox, it took more than a year to renegotiate its pact with EDS, he said.

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Managing

TOGETHER

You have a project, and you need input from your users – not an easy task. But getting them involved doesn't have to be difficult.



Despite the frenetic pace of the New York Stock Exchange, Joseph Cangemi, vice president at a New York brokerage, is a computer user who's enthusiastic about taking part in an IT project

By Natalie Engler

CONTINUED FROM PAGE 3

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Coming together, page 72

COMING TOGETHER

CONTINUED FROM PAGE 71

THREE-YEAR ENDEAVOR

Joseph Cangemi, senior vice president, Francis P. Maglio & Co., a New York brokerage

Project: Integrated Technology Plan, a wireless trading project for the New York Stock Exchange

Duration: 2½ years so far.

Number of users involved: 25

Far from being a tough recruit, Cangemi says he was the one pushing for a private intranet and handheld devices to facilitate communication among NYSE brokers, traders and investors.

After 2½ years of juggling hectic days on the trading floor with project meetings and technology testing — and with little payoff — he remains enthusiastic.

Why?

▮ The project's formal description wasn't derived from an economic study or IS agenda. It emerged from a broker committee's "wish list" compiled over three years. As a result, Cangemi and most of the brokers involved are absolutely convinced that "the cost up front will come back in spades later on," he says.

▮ The technology people "have tried to accommodate our schedule," which involves heavy trading from 9:30 a.m. to 4 p.m., he says. "It makes their day longer and less productive" because they can't work with users during trading hours, but it's critical for users, he says.

▮ At the first meeting, the technology people provided four pages of acronyms and definitions. At first, Cangemi says, "it was mind-boggling." But it was immensely helpful. He says he looks at it before and during every meeting.

▮ Brokers are spared the administrative work. "If I had to take over those responsibilities," Cangemi says, the project "wouldn't get done."

Advice to others

▮ Be careful whom you recruit. The NYSE's first committee of users consisted of the most senior brokers. It was dismantled after three months because their schedules were too busy. Midlevel brokers, who have more time and staff members to send in their place, have proved more successful.

▮ When you must say "no," avoid technical jargon. Whenever the NYSE brokers ask for something that's difficult to provide, the systems people "lapse into computerese," Cangemi complains. The brokers become flustered and feel put off. But when technologists explain why a request would "jeopardize integrity" or "sacrifice security," the brokers nod appreciatively. Also, tell users what it would take to fulfill their request: perhaps three additional months and $50,000. Do they have that in their budget?

▮ Assign a facilitator, someone with a foot in both worlds. "We couldn't do it without someone in that role," Cangemi says.

MANUFACTURING SUCCESS

Evelyn Ashe, configuration control technician and Vadene Echols, configuration engineer, Williams Technologies, Inc., a Summerville, S.C., automatic transmission remanufacturing company

Project: ProNet, a control valve body operation

Duration: four months

Number of users involved: five

The project doubled productivity, nearly halved cycle times, helped quadruple sales and resulted in system sales to Ford Motor Co. and Allison Transmission, Inc.

When Greg Allen, head of IS at Williams Technologies, began working on a system to computerize the manufacturing of automotive transmissions, he was dependent on users such as Echols and Ashe for their industry knowledge.

In the beginning, many users were daunted by the technology and feared they might lose their jobs. Later, they became enthusiastic participants.

Here's what they say turned them around:

▮ Once Allen selected his users, he told each what he hoped to accomplish and what they had to offer.

"Greg said I had quite a bit of knowledge about production and what people were looking for," says Ashe, who supervised the assembly of valve body transmissions.

▮ Allen explained the technology in terms that they could relate to.

He had them train him to perform their jobs, then he used analogies to explain the technology. He told Echols that the Open Access database was like the thousands of books of assembly instructions she had to pore through to build each transmission. The hard drive, he said, was like a file drawer. The RAM is like a desktop, and "you take the stuff out of your file cabinet, put it on your desktop and put it away when you are finished." Once he presented it, the benefits were evident, she says.

▮ The project altered both women's careers.

Ashe was promoted from the valve body assembly line to engineering, where she builds databases for all the transmissions the company makes. Echols says she has doubled her productivity.

▮ The project included a feedback mechanism.

The factory floor system lets users give input to the engineering team. It also captures the tricks people develop as they use a manufacturing station so new operators can benefit from their experience.

Engler is a freelance writer in Cambridge, Mass.

Obtaining User Involvement: A Step-by-Step Approach

• GOAL: IDENTIFY THE CORRECT USER

1. Clearly identify the user base (everyone who will use the application) through extensive interviews, and select someone who emulates these opinions.
2. Structure this process in stages to gain constant feedback from all users.
3. Structure a plan for gaining customer input, not just internal user input.

• GOAL: INVOLVE THE USER EARLY AND OFTEN

1. Get the user to commit to ownership of the project for its entire life cycle, including development, implementation and maintenance.
2. Motivate the user through rules and incentives.
3. Educate and negotiate with the user regarding the roles and responsibilities of ownership. Listen to the users' expectations. What does "involvement" mean to them?
4. Assign a facilitator or liaison.

• GOAL: CREATE AND MAINTAIN A QUALITY RELATIONSHIP

1. Lay the ground rules for effective teamwork.
2. Make an effort to understand the users' business.
3. Define a method for managing your expectations of one another (may include creating contracts and written rules).
4. Hold regular progress meetings involving the user.
5. Publish quality metrics to measure progress.

• GOAL: MAKE IMPROVEMENT EASY

1. Learn the user's language.
2. Proactively solicit the user's opinions.
3. Show the user that his or her opinions make a difference.
4. Make sure there's a demonstrated benefit for user involvement.

Source: The Standish Group International, Inc., a Dennis, Mass., market research and technical advisory firm

LESS FIG IN CITY HALL

Phoenix project rises with full-time input from two end users

M[illegible] Ingersoll occupies a box near the top of the organization chart for the city of Phoenix's big human resources system development project. What's unusual about this is that Ingersoll isn't an IS manager; he's the city's deputy personnel director.

Ingersoll and another end user, the deputy controller, are called transition managers. Usually, end users are assigned to IS projects part-time, but the two Phoenix officials are on this one full-time. They have handed over their regular jobs to others for two years and pitched their tents deep inside the IS camp.

"My initial reaction was, 'Why the hell would they want me for this?'" Ingersoll says. He says he was accepted and convinced by Carl Myers, assistant information technology director, that the project's success depended on his full-time commitment to the process.

"The biggest challenge of client/server is dealing with cultural change among users," Myers says. "You have to sell it to the business unit, and transition managers who are members of the IS project have a lot of credibility with end users."

Myers says the city's use of senior transition managers has cut the time required to do business process re-engineering 50% and "mitigated the risk of putting in systems without the required cultural change."

But what about the cultural change for Ingersoll? "Carl and I had our out-ins," he admits. "We had to sort it out."

Phoenix officials say it takes hard work to bridge the cultural gap between users and IS. "At first, there was a lot of conflict," Myers says. "You have to mediate a lot; you have to have conflict resolution and team building."

And a combination of carrots and sticks helped as well, Ingersoll adds. When he joined the project his slogan was, "All eyes on the prize," to which he added, "All eyes on the money."

It also helps to pick the right users for the project. "We went after folks specifically," Myers says. "We wanted customers who could see a vision and move toward it, customers with people skills who could communicate the vision and get people buy-in to it."

—Gary H. Anthes



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RESOURCES HOT HA



THE MUST-ATTEND IS

Data Warehousing Institute's (DWI) Annual Implementation Conference

Town & Country Hotel and Convention Center
San Diego, Jan. 20-25

Want to hear about implementing data warehouses from information systems managers who've actually built them? Then don't miss this event. The DWI's Implementation Conference features 21 case studies in which members talk about their experiences. That's 80 hours of news and views from The Chase Manhattan Bank Corp., Playtex Apparel, Inc., Union Pacific Corp., Melville Corp.'s CVS drug store chain, PacifiCare Health Systems, Inc. and other companies.

The event also includes product comparisons and full-day courses on data quality, data modeling, migrating from data marts, managing data warehouses and other topics. The do's-and-don'ts approach of this event hit a nerve with last year's crowd, so reserve your space early — there's room for only 1,200 people, and the DWI turned away 200 last year.

Cost: *$1,275 to $1,350 for three days, more for all six days. Contact: Registration (719) 599-4303; E-mail: igfisher@aol.com; World Wide Web address: www.tekptnr.com/tpi/tdwi/.*

Macworld Expo

Moscone Center
San Francisco, Jan. 7-10

Apple Computer, Inc. is expected to finally unveil its operating system strategy at this event. Also look for PowerPC Platform products and hardware that can run multiple operating systems. A must event for Macintosh users, it's also strong on cutting-edge graphics, the Internet, publishing and multimedia.

Cost: *$120. Contact: (800) 645-3976; Web address: www.mha.com/macworld.*

Will Crime Choke Your Business?

Harvey's Resort Hotel/Casino
Lake Tahoe, Nev., Jan. 22-24

This new event promises to deliver the skinny on computer crime. Experts and cybercops will talk about computer theft, crime in cyberspace, security, executive liability and even "computer forensics."

Cost: *$695 to $1,695. Contact: IBC USA Conferences, (508) 481-6400; Web address: www.io.org/~ibc/crime.*

RSA Data Security Conference

Fairmont Hotel
San Francisco, Jan. 28-31

Still *the* place to be if you're concerned with cryptography, but this annual event is now studded with sessions on user-oriented security topics — firewalls, standards, information warfare and new products. The conference includes tracks for developers and analysts.

Cost: *$995 to $1,295. Contact: Elkay Productions, (415) 544-9300; Web address: www.rsa.com.*

ComNet '97

Washington Convention Center
Washington, Feb. 3-6

A mega wide-area networking exposition, ComNet '97 will have more than 100 sessions and tutorials, and more than 500 exhibitors are expected to be on hand. The various conference tracks cover WANs, fast LANs, remote access, network management and intranets. You can expect telecommunications reform to dominate the track on deregulation.

Cost: *$1,195, expo and tutorials. Contact: (800) 545-3976; Web address: www.mha.com/comnet.*

Demo '97

Renaissance Esmeralda Resort
Indian Wells, Calif., Feb. 9-12

InfoWorld presents a cavalcade of spanking-new PC and Internet products at this event, all demonstrated in front of a large industry audience. The event is a great way to get up close and personal with next year's important new gizmos.

Cost: *$1,995 before Dec. 15, $2,295 after. Contact: InfoWorld's Conference and Media Group, (800) 633-4312; Web address: www.demo.com.*

Training '97 Conference & Expo

Inforum Conference & Expo Center
Atlanta, Feb. 9-13

This is one of the largest conferences available that focuses on training issues and products. Although the Training '97 Conference & Expo isn't IS-specific, this year's event is stuffed with sessions on information technology-based training. Keynote speakers will include Stephen Covey, Tom Peters and Scott Adams.

Cost: *$895; extra for pre- and postconference sessions. Contact: (800) 765-7616; Web address: www.lakewoodpub.com.*

Computerworld staff members Allan E. Alter, Gary H. Anthes, Charles Babcock, Lisa Picarille, Rick Saia and David Weldon contributed to this report.

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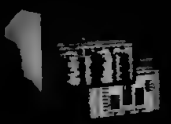
CONFERENCES ONLINE

We will no longer run our regular monthly listings of conferences and workshops for IS managers. But you can find them on our Web site, @Computerworld (www.computerworld.com). In addition, every other month, we will publish Hot Happenings, our picks of top upcoming conferences. On Jan. 13, look for our selections for March and April.

What FREEDOM looks like.



The computer of the future.





Sun

JIM CHAMPY

THE FRONT LINE DECIDE

Even old "Blood and Guts" Gen. George Patton was starting to get it right: "Never tell people how to do things. Tell them what to do, and they will surprise you with their integrity." Well, George, it isn't just their integrity that people will surprise you with. They'll also surprise you with their ingenuity — and their desire to do the right thing by your customers.

One of the things that Mike Hammer and I recognized early in our re-engineering work was that information technology would change the way we managed. And one of the rules that would be broken is that "managers make all decisions." Decision-making, we argued, would become part of everyone's job. Now, three years after we wrote *Reengineering the Corporation*, I believe that prediction is a fact.

But not all managers agree. During a recent talk in Southeast Asia in which I was making this argument, I was forcefully interrupted by a senior manager. "Mr. Champy," he almost shouted, "you must understand that here in Asia, our success is based on being able to tell people what to do and expecting them to do it. Obedience is the rule."

Sad, I thought, both for the Asian worker and for the business. A business based on blind obedience wastes the minds of its people and sows the seeds of its own destruction.

Clearly, IT has permanently raised customer expectations. The combination of modern database technologies and communications technologies allows information to be available to those on the front line who deal directly with the customer. People on the front line must have the support to make decisions using that technology. Here's what it will take:

First, a company's leadership must foster a culture that believes in the good sense of its people. This belief holds that when people are given the right information, they will do the right thing. A president of a large insurance company told me how surprised he was by a group of what he called "junior clerks." He had put them in a room and asked them to redesign the company's claims processes. They did brilliant work. "I just didn't expect those people could do that," he exclaimed. Sadly, that insurance company president was saying, without even knowing it, that he didn't trust his people's judgment.

Second, a company must hire people willing to be accountable for their decisions, people who recognize that, in the end, the customer is the only source of their job security. Those people are harder to find, and they are often outnumbered by those unwilling to shoulder the burdens of responsibility.

Third, companies must increase their commitment to continually educate the workforce. And that education isn't just training. It truly imbues people with a sense of how the business operates, how service is provided, how products are made, what customers expect and the consequences of decisions, good and bad.

I see this trend toward the "empowered" workforce to be irreversible. And it isn't about workforce obedience; it's about people's deep-seated commitment. The founder and CEO of Work Family Directions, Fran Rodgers, points out, "What counts today is not the chain of command but the chain of commitment — employer to employee to customer."

But this trend of empowerment is encountering two obstacles. First, there are country cultures, such as the one I found in Southeast Asia.

Managers are the second obstacle. They say, "You hold us accountable for the performance of the business, yet you want us to be less controlling." Part of the answer is for managers to become more like scouts in the Old West, riding ahead and reporting back to the wagon train what to expect. By being sensors for their employees, they can provide, not blind but enlightened support for their initiatives and ideas.

Adroit use of IT by managers is the key. And that means creating closer-than-ever relationships with information systems managers. The best IS managers tie their destinies to those of line managers. IS managers who find themselves marginalized worry too much about their relationships with the "top guns" instead of the line.

Finally, it's worth reminding ourselves that the "command and control" model was never all it was cracked up to be. In Charles Guggenheim's magnificent documentary on the 50th anniversary of D-Day, one of the brave soldiers who was on the beach that day said, "Rank had nothing to do with anything on that beach. Everybody, individually, each one of us did what they had to do. We were recreating from this mass of bodies a fighting unit again. And it was done by the soldiers, not the admirals." Remember those words: It was done by the soldiers.

Champy is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. His newspaper columns are syndicated by Tribune Media Services.

RESOURCES IS MANAGER'S BOOKSHELF



International User Interfaces
Edited by Elisa M. del Galdo and Jakob Nielsen
Wiley Computer Publishing, New York; 270 pages; $49.95 (hardcover)

In an age of rampant globalization, you may find yourself having to create an application interface that's as usable in Bangalore as in Buffalo. But globalizing applications means more than just translating words on screen. For example, how do you handle text selection in Chinese, a language that doesn't separate characters into individual words? Did you remember that Arabic-speaking users read screens from the top right corner and that pull-down menus have to be reversed from their usual order in the English-speaking interface?

These are among the useful points found in *International User Interfaces*. Unfortunately, to find them the reader has to wade through too many pages of turgid, sometimes wandering, prose.

This isn't a thorough, how-to guide to building user interfaces for a global audience, but rather a series of essays on subjects ranging from "Impact of Culture on User Interface Design" to "The Design of Multilingual Documents."

With a few exceptions, the essays are too long, too disconnected and too hard to read. This book is too academic and too unfocused for developers who must quickly learn how to globalize applications. — Robert L. Scheier

The Computer Desktop Encyclopedia
By Alan Freedman
Amacom, New York; 1,005 pages; $39.95 (paperback)

From A to Z, this is as complete a reference on computers as you can find. And unless you're a walking encyclopedia with all that data stored in your cranium, consider having this book within easy reach.

You'll find explanations for just about every term, whether its time has come and gone or whether it's widely used today. Even some of the illustrations are a trip into high-tech history or ways of showcasing a little levity. For instance, the entry for the acronym GIGO (garbage in, garbage out), is accompanied by a line drawing of a bespectacled gentleman tossing books into a garbage can marked GIGO. And just for counting's sake, entries related to IBM take up about five pages; Microsoft and its products take up two. — Rick Saia

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(b) Netware (f) Windows NT
(c) OS/2 (g) Windows
(d) Unix (h) NeXTstep

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Internet Products ❒ Yes ❒ No

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(c) ❒ Web authoring/development tools

B4-6 E

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Buyer's Guide

Wai ROUND

Third in an occasional series of reviews that focus on the World Wide Web strategies of the leading database vendors.

By Kevin Burden

SYBASE, INC.'s Web.sql 1.1 creates an open link between any Web server software and the relational or legacy data source of your choice. And although the four users interviewed for this review successfully set up dynamic Web sites with it, they anxiously await the product's third rendition.

Because the openness is achieved through Common Gateway Interface (CGI), performance is slower than it would be through Netscape Communications Corp.'s Navigator Server application programming interface (NSAPI). Sybase claims that Web.sql 1.1 supports NSAPI, but several users couldn't get it to work with Netscape's latest enterprise servers.

That problem, coupled with the users' desire for a snazzier development environment than Perl, has users waiting for Emeryville, Calif.-based Sybase to announce the next version.

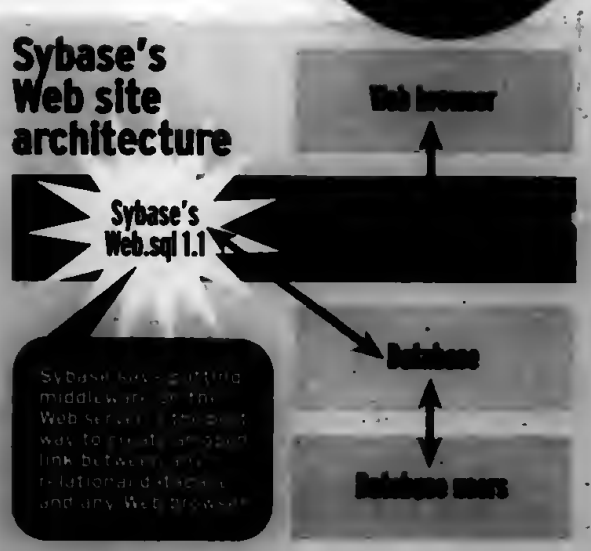
Beyond the complaints, users say they chose Sybase more for its Internet approach and less for its product's maturity.

While Oracle Corp. uses a specialized Web server and IBM gives developers tools to rework DB2 applications for the Web, Sybase has put Web.sql 1.1 on the Web server. And that is one of the keys to the open link. "As we extend our data to the outside world through the Internet, it's important that a variety of different users can access it," says Kevin Blankenship, vice president of interactive networked services at Navidec, Inc. in Englewood, Colo.

Computerworld discussed Sybase's Internet strategy with four Web.sql 1.1 users:

- Kevin Blankenship at Navidec.
- T. J. Grenwal, vice president of technical services at Internet Resource Group, Inc. in Toronto.
- U.S. Army Capt. Adam Albina at the U.S. Military Academy at West Point in West Point, N.Y.
- Antal Bartus, database manager at Hungarian Telecom in Budapest.

Each say they were reasonably satisfied with Web.sql and highly confident in Sybase's Internet direction.



INSTALLATION

Installing the second iteration of Web.sql wasn't as difficult as it was in the original version, users say. The four users collectively gave Web.sql 1.1 an A for installation.

The earlier difficulties had been with the Perl programming language, which Web.sql depends heavily on and is installed simultaneously in the same process. Early versions of Web.sql required a lot of manual tweaking to install the Perl libraries. Now, "it includes tools to automate and configure [Perl]; it's nearly seamless," Blankenship says.

Web.sql is available on Sun Microsystems, Inc.'s Solaris, Silicon Graphics, Inc.'s IRIX, Microsoft Corp.'s Windows NT and Hewlett-Packard Co.'s HP-UX.

DEVELOPMENT ENVIRONMENT

Most experienced Perl users admit that there are pros and cons to using the language. And because Web.sql requires users to use Perl, users split their satisfaction grades among B's and C's.

Perl doesn't put limits on a developer, but many users want something prettier than a text-based, command-line programming language. Unfortunately, the other option is to write Transact-SQL statements.

Users say they would like an integrated development environment, but Java wrappers would go a long way to satisfying them. "Java has distinguished itself as the tool that will push us for the next year. We're hoping Sybase also goes in that direction," Blankenship says (see box at left).

PERFORMANCE

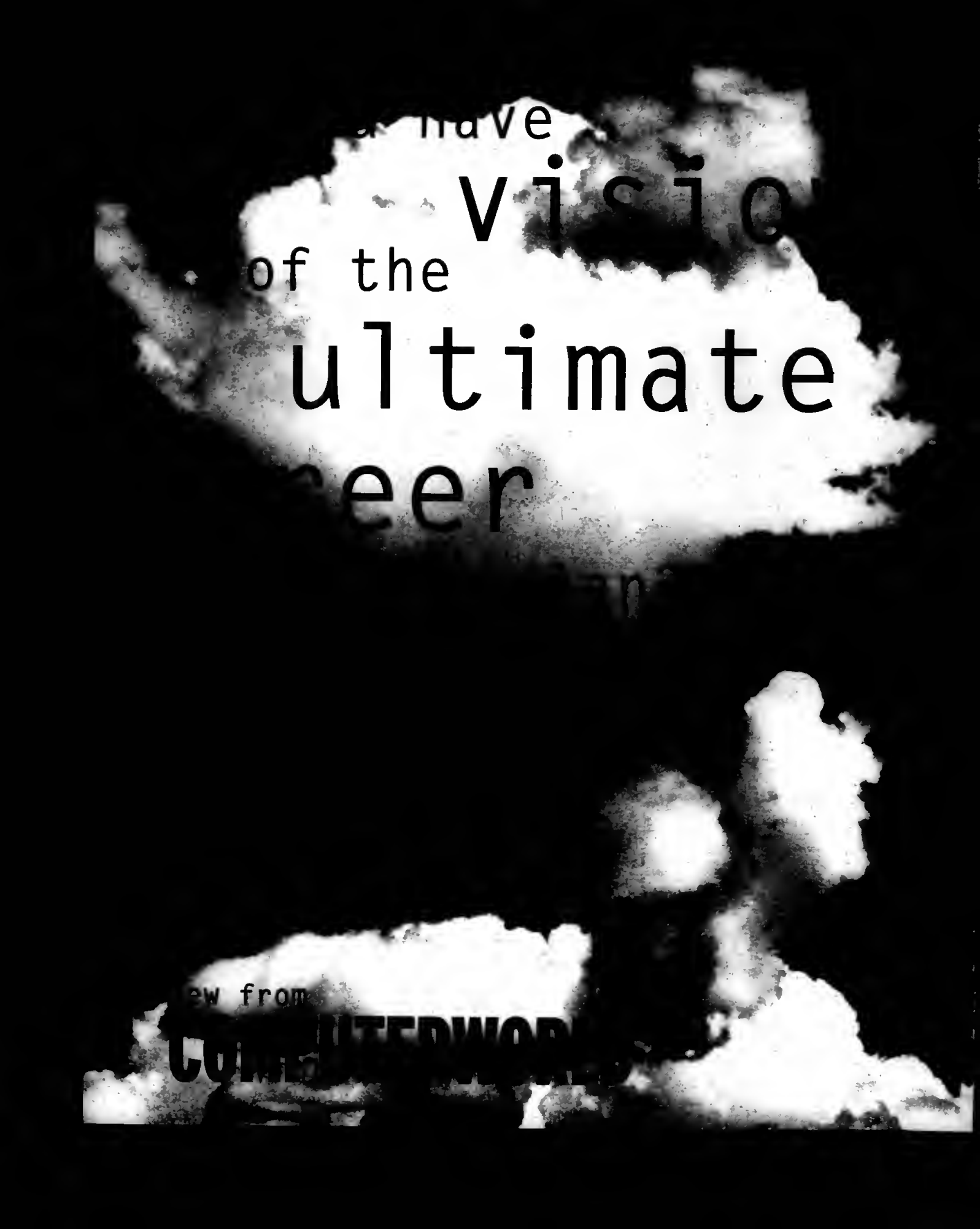
Users say they're generally satisfied with Web.sql's speed, but they know it would be faster if they could get it to properly use NSAPI.

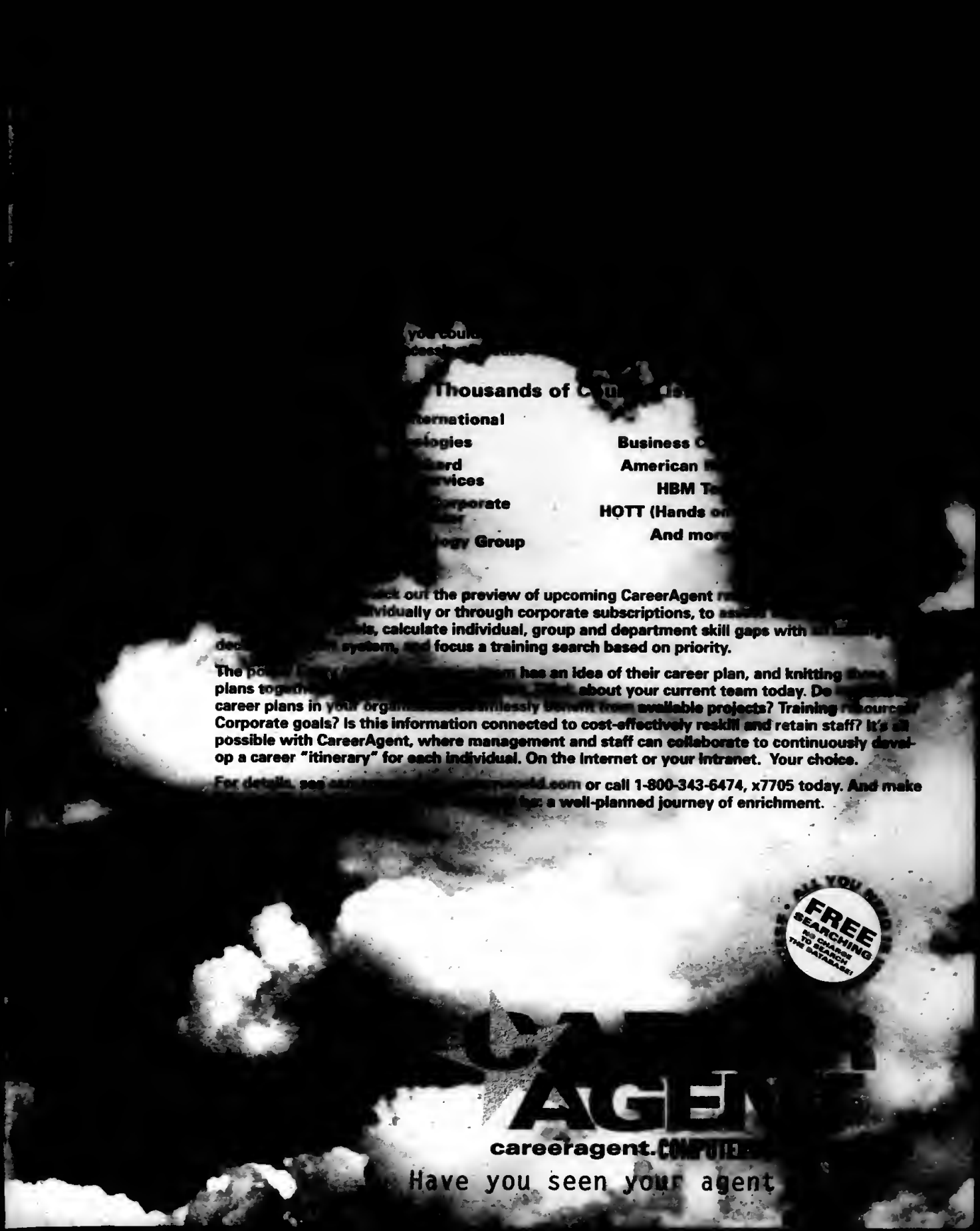
Two users who tried an NSAPI setup got it to work only with Netscape's older commerce servers. Through CGI, Web.sql 1.1 works as advertised, the other two users say. CGI is slower than NSAPI because it needs to reopen a database connection with each query, while NSAPI maintains live connections.

SUPPORT

Sybase, like many firms now offering Web products, struggled with support questions until it built a knowledge base. Users say Sybase's competence deserves an A because the firm hired knowledgeable people and conducts weekly teleconferences with the beta team.

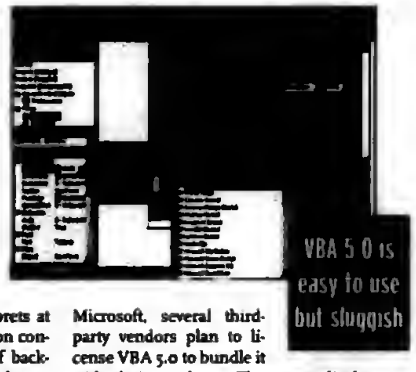
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PRODUCT REVIEW

VBA obese but effective



By Howard Millman

IT'S TIME TO extend the list of notable oxymorons such as jumbo shrimp and low-calorie ice cream to include "high-performance Visual Basic development environment."

Microsoft Corp. in Redmond, Wash., has revamped and unbundled its Visual Basic for Applications (VBA) development environment. The upgrade to Version 5.0 provides a powerful, intuitive and cross-platform scripting language, but it suffers from what can best be described as "code corpulence." On the positive side, the upgrade corrects two well-deserved criticisms about the prior version: its mediocre, nongraphical interface and its restricted availability to only a relative few Microsoft applications.

VBA 5.0, an embedded development system and a subset of Visual Basic 5.0, works only when it's built in to a primary application; it can't stand alone. For developers who work within a specific environment, VBA 5.0 offers numerous advantages over its independent bigger brother. VBA 5.0 is a logical choice for projects that don't require runtime executables.

VBA 5.0 delivers some important technical improvements over the initial VBA release. These include ActiveX support, an intuitive graphical interface and a cross-platform forms designer, which is a subset of the module used in Access. Enhanced ActiveX, known previously as OLE, gives the programming environment needed cross-platform capabilities, as does a new forms designer. And the product now interoperates with all of Office 97's modules. The earlier version worked only with Microsoft's Excel, Project and Access.

OFFICE APPLICATION CUSTOMIZER

I tested a late beta version of VBA 5.0 with Office 97's versions of Excel and Word. VBA's deftly integrated, highly visual environment is well-suited for building customized Office 97-based applications through the use of the application's native code. But there's no free lunch served here. In exchange for its ease of use and flattened learning curve, which result from a purposeful similarity in menus, syntax and graphical orientation with Visual Basic, developers may have to tolerate a performance hit.

Following a typical development scenario, I opened blank documents in Office 97's Word and Excel and created two applications that required differing degrees of expertise. In the first, I simply created a logo that would appear in all new Word documents. I created 90% of the custom applet by selecting built-in commands and objects. For the next project, I constructed an Excel application that displayed a scrolling list of appointments, depending on the time of day.

My applications, admittedly simple, executed swiftly despite VBA's use of a hybrid compiled code. VBA 5.0 compiles to Pseudo-code, which it then interprets at runtime. But during the application construction, an excessive amount of background disk activity and a barely detectable lethargy was irritating.

My test platform consisted of a 166-MHz Pentium-based IBM PC with 16M bytes of RAM running under Windows 95. To rule out hardware faults, I ran the test on a 133-MHz Pentium-based Compaq Computer Corp. machine with similar results. The slowdown seemed to stem from the combination of beta code, Office 97's overall code corpulence and Windows 95's overhead.

This condition may well apply only to VBA's use within Office 97. According to Microsoft, several third-party vendors plan to license VBA 5.0 to bundle it with their products. They may display improved performance, particularly when their applications run on RISC processors.

PRODUCT REVIEW

Visual Basic for Applications Version 5.0

Microsoft Corp.
Redmond, Wash.
(800) 426-9400
(206) 882-8080
www.microsoft.com

B

NEW LOOK

VBA 5.0's new graphical look includes Project Explorer, which makes it easier to move among a project's objects. A Properties Window displays forms and controls. When the screen gets crowded, you can dock or hide both windows. Other visual features include drag-and-drop editing, a breakpoint insertion for easy debugging, pop-up variable values, automatic drop-down pick lists and customizable tool bars. VBA provides reusable classes and supports inheritance through encapsulation.

Although most of the product's thrust seems targeted at developers, especially in-house developers, it's nice that even nondevelopers can quickly add controls to Office 97 core modules.

Millman operates the Data System Services Group, a networking consultancy in Croton, N.Y. You can E-mail him at hmillman @mcimail.com.

MY OPINION

Parallel search engines: Seek, and ye shall find

ROSS M. GREENBERG

I SWEAR, I SPEND half my waking moments looking for something. If it's not my car keys, then it's some information I know is hiding on the Web.



I waste too much time seeking out information, and there's no excuse. Here, try it yourself: Today's column is about parallel search engines, a pretty specific term, right?

Fire up your favorite browser, go to whatever search engine you prefer, and find how many relevant hits you get. Explore each one, and find the percentage of useful hits. Now, do the same thing with five more search engines; duplicate hits don't count. When you're done, you'll see that the exercise took about 15 minutes and was a pain in the butt, annoyingly slow and redundant.

Computers should work, people should sip their morning coffee and read the paper.

Parallel search engines, however, do the work for you. They come in two flavors, host-based and locally based. Host-based parallel search engines sit on the Web, waiting for you to hit the submit button. When you do, they fire off a flood of queries to several search engines on the Web, correlating the results and turning them into pretty Hypertext Markup Language (HTML) files for your browser.

Locally based parallel search engines do pretty much the same thing, but there's no mystery box on the other side of the port. Your CPU is good enough to do the correlation and HTML work. Using either class of tool, you should be able to enter your query once and search several engines in the time it used to take to search only one. And you'll have time for that second cup of coffee.

I found a few good, useful and *free* host-based systems: Metacrawler, All4One, IFind and Savvy Search. Check them out.

I also found two really good and very useful locally based commercial products. Each does a lot more than just access multiple search engines simultaneously. They will vie for your business if you're dissatisfied with the above-mentioned freebies. They don't compete directly with each other, and each has its own advantages and disadvantages.

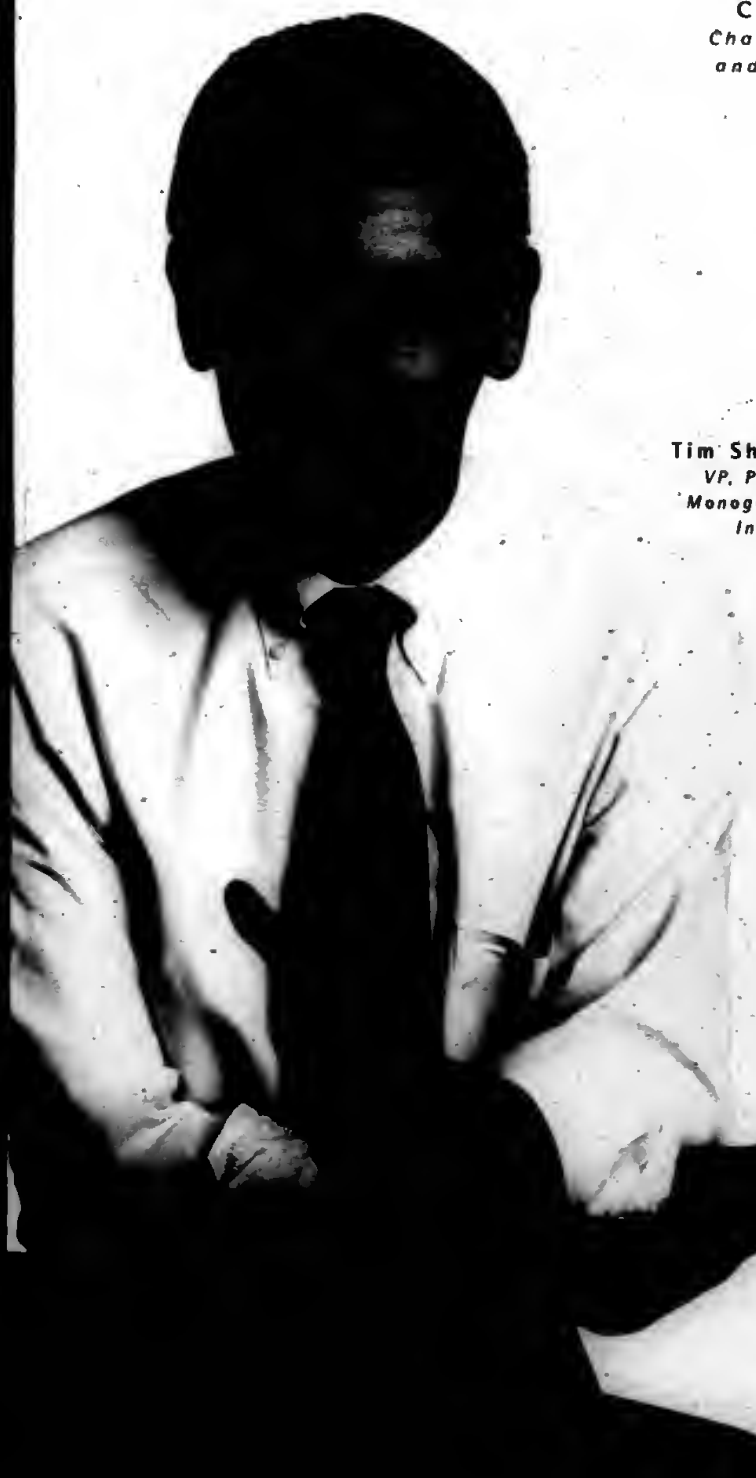
Internet FastFind from Symantec Corp. in Cupertino, Calif., (www.symantec.com) is very cool. Type in your query, select the type of search you want, then hit submit. You can watch the progress as each search engine is contacted and sends results back to be interpreted and correlated: Invalid links are discarded, and you're left with a list of valid, nonredundant links in either site or relevance order. The results are then converted to HTML and given to your browser.

Not as fast, but cooler in some ways, is WebCompass from Quarterdeck Corp. in Santa Monica, Calif. (www.quarterdeck.com). If you saw the beta and were unimpressed, take another look. It's preconfigured with sets of search engines, but you can add another search engine or create your own sets.

You submit your query, then wait until a summary screen pops up, showing each Web document considered relevant. The background agent takes over, refining and affirming each document's relevancy and viability. As you highlight each document's header, a more in-depth summary is displayed. A double click brings up your browser and loads the remote document. Each search can be saved dynamically; think of it as a bookmarked search engine.

Greenberg is a software developer in Bovina, N.Y., who specializes in Internet and security products. He can be reached at Greenber @ramnet.com.

SSA's Roger Covey on Informix.



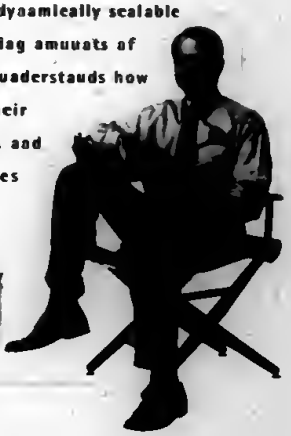
Roger Covey
Chairman and CEO, SSA

"Our clients are faced with meeting the demands of their dynamic enterprises and the challenges of implementing cost-effective and configurable information systems.

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Tim Shetler
VP, Product Management, Informix

"Informix databases are dynamically scalable to adjust to ever-increasing amounts of data and users, and SSA understands how important that is for their customers. Together, SSA and Informix allow businesses to grow global, high performance, multi-site systems, that adapt easily to changing conditions."



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In Depth



MEET the new REP

An inside look at the four types of sales reps and how to deal with them

By Li Nivett

"Hi, I'm your new account manager, and I'm here to help."

And so begins your relationship with yet another "vendor liaison" — sales representative, for those of us who speak English.

How often are you pleased with your new partner? Do you ever feel as though you're part of an arranged marriage?

The information systems community spends billions annually to select the right products. It orchestrates bidders conferences, extensive buying committees, lengthy vendor demonstrations and "objective" evaluation criteria. But how much time does the buying committee spend profiling vendor account managers to find the best match for a company's needs?

The most common reason these relationships go awry is that the salesperson's behavior is misaligned with the buyer's behavior. Before you recall your last nightmarish experience

with a sales rep from XYZ Software Co. — or fire your existing reps — here are some typical high-tech sales personalities and some ways you can effectively manage their behavior. Some may sound all too familiar.

THE SUPERHERO



When an information technology buyer calls and says "I've got $ budget for a client/server database monitoring tool," Superhero pulls out the 126-page PowerPoint presentation, hops on his rocket and lectures the buying committee for two hours. The presentation invariably includes a photo of company headquarters. The common Superhero theme is: "Our tool can leap tall buildings at a single bound!"

By overpromising, the Superhero sets impossible expectations. (This, by the way, is why post-sales consulting is such a big business.) Guess who the dissatisfied buyer calls when the product doesn't meet these expectations? One study estimates that a dissatisfied buyer tells 13 people about an unpleasant buying experience and tells only three people about a pleasant one.

During one head-to-head product evaluation I recall, a Superhero decided to write the prospect a scathing letter. The competitor's product couldn't do this, he wrote, and it couldn't do that. Its architecture was lousy. And besides, he wrote, the competition probably kicked dogs and popped children's balloons.

This letter may or may not have been libelous, but its claims couldn't be verified, and it made the sales rep's organization look bad. Thankfully, his competition and his own company's legal department helped this Superhero find a sales territory in another galaxy.

The career of the Superhero typically ends after the initial product tornado has passed or after the second libel suit has been brought against his company. His underlying deficiency is that he wants to own and solve all problems; he fails to empower the customer.

Survival tips:

- **Make sure you invite the Superhero's sales manager to the initial "getting acquainted" call.**
- **Set your company's requirements and expectations early so you can minimize misunderstandings.**
- **Remind the vendor that you want to be empowered to use the product and learn it quickly. Unless you've just bought outsourcing services, you — not the vendor — own the business problem.**
- **Build an implementation plan for the product. You and the vendor should track progress on a regular basis.**

LEGACY LARRY



Larry's favorite pastime is selling products to technocrats who are also former systems engineers. He has a general distrust for anyone under age 50. Competitors love Larry because he will respond, in detail, to every inbound request for proposals (RFP).

What Larry fails to understand is that his competitors probably helped the prospect draft the RFP in the first place. By the time Larry sees it, the prospect may just be filling in blanks to justify a purchasing decision that was made before the RFP was ever drawn up. Does that sound familiar? Don't you buy from people rather than from RFPs? Although Larry's always busy responding to RFPs, that doesn't translate into productivity — from your point of view or from Larry's firm's point of view. When he's losing a sale, Larry carries his laptop to a client visit (with an extra battery pack) to perform amazing demos. A former Legacy Larry once demonstrated a new database to The Boeing Co. and said: "If you were a bank, you'd really love this feature!"

Survival tips:

- **Before Larry arrives at your doorstep with demo in hand, invite a senior executive from outside IS to talk with Larry for an hour and share the business reasons driving the product evaluation.**
- **Corral your best technical staff and ask them what specific capabilities or features you need to see in Larry's product. Then make sure they match the business goals the IS executive articulated.**
- **The demonstration should be limited to two hours or less, depending on the scope of the product or size of the purchase.**
- **Demand that only the capabilities that address your business goals be demonstrated at the session.**

MOONSTRUCK MARV



No matter how much dough Marv rakes in, he'll never be satisfied. This character does extremely well selling bleeding-edge technology, such as Internet tools. His favorite buyers are product visionaries with deep pockets. He prefers not to leave a paper trail, because chaos rules his life. Besides, who needs return-on-investment analysis and reference accounts?

Marv is a closet-techie. He wants to talk technology rather than find out about his customers' needs. He knows the latest hip product inside and out, but he probably couldn't pass a Business 101 course at the local community college. He is great at selling the latest thing while it's hot, but don't ask him to explain how he did it.

He dislikes any form of process and can't articulate the reasons behind his most recent successful sale. Once Marv has saturated his accounts with discounted products they don't know how to use, he gets promoted to management so he can terrorize the sales team.

Survival tips:

- **Invest in consulting services from the vendor during the early implementation phase. Marv may not be able to keep his promises on how easy the installation will be.**
- **Become acquainted with the senior technical staff from this vendor. You'll probably need their help; Marv's attention span and commitment to your success will last only as long as it takes to cash his commission check.**

FORREST THE GROUNDSKEEPER



Thumbs up if Forrest supports your account. He practices patience with pragmatic, doubting buyers, understands product capabilities and prefers conversations over presentations. Purchasing managers love working with him because one telephone call to Forrest means an issue will be resolved.

Why? Because he has full command of company resources. Sales managers and finance officers applaud him because he consistently builds revenue, client loyalty and trust. Vendors and customers should make every effort to retain Forrest; otherwise, you can bet the competition will be relentless in recruiting him.

Survival tips:

- **Unless you are a Fortune 500 company, you may never meet a Forrest. They are quickly scooped up by the larger accounts.**
- **If you are one of Forrest's lucky clients, request a specific amount of time with him every month to discuss new product developments and company directions and to assign the best support people to help you.**
- **If Forrest has a teammate also supporting your account, determine early on whether Forrest is being groomed for a management position. Negotiate time with him in advance and ask the vendor for continued coverage from Forrest — even after he gets promoted.**

Nirell is president of Nirell & Associates, a software-sales consulting firm. She has spent 13 years working with multinational software companies and systems integrators. Her Internet address is lisasolsel@aol.com.

COMPUTERWORLD

When it comes to sales reps, everybody needs to vent. Visit www.computerworld.com and swap horror stories.

with a sales rep from XYZ Software Co. — or fire your existing reps — here are some typical high-tech sales personalities and some ways you can effectively manage their behavior. Some may sound all too familiar.

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By overpromising, the Superhero sets impossible expectations. (This, by the way, is why post-sales consulting is such a big business.) Guess who the dissatisfied buyer calls when the product doesn't meet these expectations? One study estimates that a dissatisfied buyer tells 13 people about an unpleasant buying experience and tells only three people about a pleasant one.

During one head-to-head product evaluation I recall, a Superhero decided to write the prospect a scathing letter. The competitor's product couldn't do this, he wrote, and it couldn't do that. Its architecture was lousy. And besides, he wrote, the competition probably kicked dogs and popped children's balloons.

This letter may or may not have been libelous, but its claims couldn't be verified, and it made the sales rep's organization look bad. Thankfully, his competition and his own company's legal department helped this Superhero find a sales territory in another galaxy.

The career of the Superhero typically ends after the initial product tornado has passed or after the second libel suit has been brought against his company. His underlying deficiency is that he wants to own and solve all problems; he fails to empower the customer.

Survival tips:

- **Make sure you invite the Superhero's sales manager to the initial "getting acquainted" call.**
- **Set your company's requirements and expectations early so you can minimize misunderstandings.**
- **Remind the vendor that you want to be empowered to use the product and learn it quickly. Unless you've just bought outsourcing services, you — not the vendor — own the business problem.**
- **Build an implementation plan for the product. You and the vendor should track progress on a regular basis.**

LEGACY LARRY



Larry's favorite pastime is selling products to technocrats who are, also former systems engineers. He has a general distrust for anyone under age 50. Competitors love Larry because he will respond, in detail, to every inbound request for proposals (RFP).

What Larry fails to understand is that his competitors probably helped the prospect draft the RFP in the first place. By the time Larry sees it, the prospect may just be filling in blanks to justify a purchasing decision that was made before the RFP was ever drawn up. Does that sound familiar? Don't you buy from people rather than from RFPs? Although Larry's always busy responding to RFPs, that doesn't translate into productivity — from your point of view or from Larry's firm's point of view. When he's losing a sale, Larry carries his laptop to a client visit (with an extra battery pack) to perform amazing demos. A former Legacy Larry once demonstrated a new database to The Boeing Co. and said, "If you were a bank, you'd really love this feature!"

Survival tips:

- **Before Larry arrives at your doorstep with demo in hand, invite a senior executive from outside IS to talk with Larry for an hour and share the business reasons driving the product evaluation.**
- **Corral your best technical staff and ask them what specific capabilities or features you need to see in Larry's product. Then make sure they match the business goals the IS executive articulated.**
- **The demonstration should be limited to two hours or less, depending on the scope of the product or size of the purchase.**
- **Demand that only the capabilities that address your business goals be demonstrated at the session.**

MOONSTRUCK MARV



No matter how much dough Marv rakes in, he'll never be satisfied. This character does extremely well selling bleeding-edge technology, such as Internet tools. His favorite buyers are product visionaries with deep pockets. He prefers not to leave a paper trail; because chaos rules his life. Besides, who needs return-on-investment analysis and reference accounts?

Marv is a closet techie. He wants to talk technology rather than find out about his customers' needs. He knows the latest hip product inside and out, but he probably couldn't pass a Business 101 course at the local community college. He is great at selling the latest thing while it's hot, but don't ask him to explain how he did it.

He dislikes any form of process and can't articulate the reasons behind his most recent successful sale. Once Marv has saturated his accounts with discounted products they don't know how to use, he gets promoted to management so he can terrorize the sales team.

Survival tips:

- **Invest in consulting services from the vendor during the early implementation phase. Marv may not be able to keep his promises on how easy the installation will be.**
- **Become acquainted with the senior technical staff from this vendor. You'll probably need their help; Marv's attention span and commitment to your success will last only as long as it takes to cash his commission check.**

FORREST THE GROUNDSKEEPER



Thumbs up if Forrest supports your account. He practices patience with pragmatic, doubting buyers, understands product capabilities and prefers conversations over presentations. Purchasing managers love working with him because one telephone call to Forrest means an issue will be resolved.

Why? Because he has full command of company resources. Sales managers and finance officers applaud him because he consistently builds revenue, client loyalty and trust. Vendors and customers should make every effort to retain Forrest; otherwise, you can bet the competition will be relentless in recruiting him.

Survival tips:

- **Unless you are a Fortune 500 company, you may never meet a Forrest. They are quickly scooped up by the larger accounts.**
- **If you are one of Forrest's lucky clients, request a specific amount of time with him every month to discuss new product developments and company directions and to assign the best support people to help you.**
- **If Forrest has a teammate also supporting your account, determine early on whether Forrest is being groomed for a management position. Negotiate time with him in advance and ask the vendor for continued coverage from Forrest — even after he gets promoted.**

Nirell is president of Nirell & Associates, a software-sales consulting firm. She has spent 13 years working with multinational software companies and systems integrators. Her Internet address is lisasobel@aol.com.

Seven questions

When you meet a vendor's new account team, you should ask them the following questions:

1. [illegible]

[illegible]

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GROUPWARE: STRENGTH IN NUMBERS

By L[illegible] Habe[illegible]

To ensure an edge in groupware job competition, one skill is never enough

IN TODAY'S information systems job market, those with skills in groupware and related technologies such as electronic mail have a competitive edge. But IS professionals, developers and network managers are better served by having a well-rounded skills set than by pigeonholing themselves as groupware gurus.

Groupware is a technology in transition. Lotus Development Corp. may have set the stage for the groupware market several years ago with its Notes product. But the groupware story today is one of change. Internet and intranet technology, in particular, is challenging groupware.

As a result, many companies are taking a wait-and-see approach to groupware. Even among organizations that have implemented groupware, hiring for these skills is down, from 18 months ago, says Trish Murphy, a director at Source Services Corp. in San Francisco.

"Hiring for Lotus Notes, in particular, has fallen off lately, with many companies training internal staff to fill their needs," Murphy says.

It seems groupware skills are being absorbed as part of a larger job description. These extremely desirable skills are likely to give job candidates who have them an edge in the hiring process.

The expertise most in demand is Notes, followed by Lotus' CC:Mail and Microsoft Corp.'s Mail and Exchange. Skills less in demand are Banyan Systems, Inc.'s BeyondMail and Novell, Inc.'s GroupWise.

NOTES

The priority mail

Although Notes isn't as hot a skill as it was just a year ago, hiring demand remains moderate. Recruiters report that 40% to 60% of IS job postings require some knowledge of Notes. Stan Durbas, president of Data Careers, an IS recruiter in Middleton, Conn., says he has about a half-dozen openings for full-time and contract Notes positions.

Notes is an infrastructure-type groupware product and a development environment that requires users to hire developers as well as administrators. But hiring managers say they aren't looking for Notes gurus; they're looking for Notes expertise along with other development or networked application administration experience.

Notes talent is most often sought by companies that have embraced Notes and have an ongoing need for additional personnel. They tend to be larger organizations.

Such is the case at Dayton Hudson Corp. in Minneapolis. The fourth-largest retailer in the U.S. has used Notes for a year and needs to fill a few Notes developer positions in the next couple of months, says spokeswoman Susan Eich.

"We're looking for IS people with a broad skills set that includes Notes expertise," Eich says. The company expects to have difficulty finding the talent locally and will conduct a national search.

Columbia House Co. in Terre Haute, Ind., is moving to Notes. It has two strategies to fill its IS pool with Notes talent: retrain internal professionals and hire from the outside.

Scott Smith, director of human resources at Columbia House, says the company needs someone with a strong Notes background.

"We're looking for someone with a broad skills set that includes Notes experience," Smith says. He says he expects half the job openings at the company over the next 12 months to require people familiar with Notes.

Demand for Notes talent is slightly greater than supply, Murphy says, and more companies seek Notes developers than administrators.

Compensation for Notes skills is greater than for other groupware skills by about $10,000 annually, on average. That means IS professionals with Notes experience and a broader skills set — including familiarity with Windows, Windows NT and graphical user interface development and three years' experience in the industry — can expect to be paid between $40,000 and $60,000.

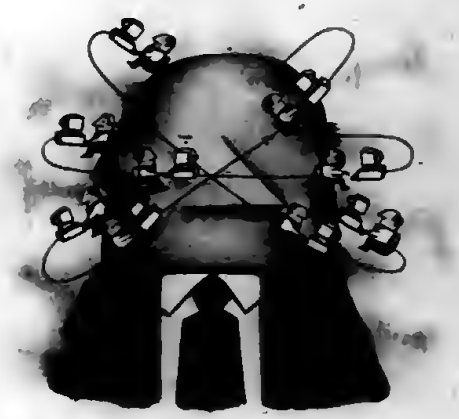
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CC:MAIL, MAIL and EXCHANGE

Becoming standard delivery

Hiring managers constantly seek IS professionals familiar with CC:Mail and Microsoft Mail.

During the past nine months, however, recruiters have seen demand for Mail and Exchange overshadow that for CC:Mail. "We're seeing many companies move from Novell to NT, and with that they're moving to a Microsoft Mail solution," Murphy says.

Case in point: Deere & Co. in Moline, Ill. The maker of farm and industrial tractors, machinery and equipment, with more than 36,000 employees, recently decided to standardize on one E-mail product — Exchange.

Moving to Exchange is among several strategic information technology initiatives at Deere that are tied to its adoption of Windows NT. During the next 18 months, Deere expects to hire 15 to 25 infrastructure analysts who have firsthand knowledge of Exchange.

Salaries for IS professionals with two years' mail experience and other network or mail administration experience range from $45,000 to $55,000.

Haber is a freelance writer in Norwell, Mass.

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REGIONAL SCOPE

Northern New England



KEE HOSPITALITY

From the Green Mountains of Vermont to the rocky shores of Maine, there are opportunities for IS professionals with the right skills BY NEIL ZOLOT

Massachusetts jumps to mind when you think of top technology job markets in the Northeast. But right next door, its three Northern New England neighbors boast their own share of information systems job opportunities.

NASHUA

NASHUA, N.H., is the most lucrative IS job market in the area, less than one hour north of Boston and the Massachusetts high-tech community on Routes 128 and 495. The primary market here is for software developers, and it's a healthy one indeed.

Brent Byers, a recruiter at Source Services Corp. in Nashua, says the job market is as strong as he has seen it in years. "There are jobs in every sector of computer work," he says.

The largest employer in the area is Sanders, a division of Lockheed Martin Corp. that has approximately 500 software engineers among its 4,700 employees. It has hired 70 software engineers this year and has 50 additional openings.

Attracting software developers to the company is the opportunity to work with several technology skills. "We're opportunity-rich here because of a diversity of applications," says Richard Burke, a software engineer and head of the countermeasures division, which develops electronic-warfare targets. "We allow our engineers to move from one application to another, Ada, C, C++, so they're not doing the same thing all the time."

Digital Equipment Corp. has a software development facility in Nashua that has 1,700 employees, many of whom develop internal components of operating systems. Hiring this year was slow but focused on key areas. Russ Johnson, director of worldwide staffing, anticipates the same for next year.

Fidelity Investments in June opened a software development and customer service facility in nearby Merrimack. By year's end, it should employ 750 workers, nearly half of them in software development. Another 1,000 jobs will be added next year; again, half will be in software development.

PORTLAND

TWO HOURS UP the coast from Boston is Portland, Maine, a city of maritime and manufacturing traditions. The mainframe market is big here.

"We're seeing an increased demand for Cobol programmers," says Edward McKersie, president of Prosearch, Inc. in Portland. "A lot of people have shifted out of it, and companies have lost employees with these skills."

On the desktop side, McKersie says the market is ripe for pros with "[Microsoft Corp.] Visual Basic and Oracle skills, especially from a database administrator standpoint, and client/server platforms such as Windows NT." He says salaries for senior programmers run from $45,000 to $50,000. Salaries for database administrators can run from $50,000 to $80,000.

Several local firms have announced plans to hire in the coming months.

Maine Medical Center will add 12 IS staffers to its 64-member department next year. Among the open positions are two project leaders, two network analysts and a telecommunications network designer, says Jerry Edson, associate vice president of IS.

BURLINGTON

FAR TO THE NORTHWEST is Burlington, Vt., the smallest IS job market of the three regions. The biggest employer here is IBM, which has approximately 7,000 employees who produce computer chips. Employment, therefore, revolves around hardware more than software.

In the mainstream market, the University of Vermont is hiring IS professionals to help it "move away from proprietary to open systems," says Norman Imamshah, director of the IS department. "Our greatest need is for people who know C++, Oracle, Java, Visual Basic and the [World Wide] Web."

Zolot is a freelance writer in Revere, Mass.

Online resources

New England online job listings:

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Online listings of *The Boston Globe* classifieds. Click on "Jobs."

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Computerworld's online job search and career development site, contains dozens of New England job postings.

MAINE: High-Tech Recruiting and Placement for Maine
www.selectech.com
Sponsored by Selectech, a professional search firm in Scarborough, just outside Portland; (800) 434-6561.

NEW HAMPSHIRE: The High Tech Career Center
www.cmsgroup.com
Sponsored by Contract Solutions, a professional recruiter in Salem; (603) 893-6776. Includes links to professional associations, job fairs and training companies.

VERMONT: Vermont Jobs
www.together.com/~vtjobs
Sponsored by Personnel Department, a search firm in South Burlington; (802) 865-4243. It covers the entire state with job listings in many fields. Click on "Computers."

What the jobs pay

Typical IS salaries in Maine, New Hampshire and Vermont

JOB POSITION	SALARY
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CIO/VP	$76,000
Computer operations manager	$59,000
Director, IS operations	$59,000
Database manager	$52,000
Network administrator	$52,000
Senior programmer/analyst	$52,000
Senior systems analyst	$52,000
Director, networks	$50,000
Communications specialist	$46,000
Manager, voice and data communications	$44,000
LAN manager	$43,000
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Computer operator	$29,000

Source: Computerworld 1996 Salary Survey

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Requirements include experience in mainframe COBOL/CICS, II, JCL, and VSAM. Knowledge of Easytrieve Plus is desirable. The ideal candidate will have experience in DB2, CICS, and/or PowerBuilder. Candidates should possess strong structured coding and testing skills. Minimum experience is one year for the Programmer and three for the Programmer/Analyst.

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These positions require at least five years of progressively responsible experience, including at least two years as a Systems Analyst. Successful candidates are experienced in structured analysis and project management. Relational database development experience is highly desirable.

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The incumbents in these positions provide superior service to the clients of our EDI Clearinghouse, through hardware and software telephone support, testing of new electronic commerce transactions, and supporting/monitoring transaction flow through the system. Two years experience in software support and data communication, and experience with electronic communications including modems is required.

EDI INSTALLATION AND TRAINING REPRESENTATIVES

Incumbents in these positions install hardware and software at client sites, and provide individual and group training. Responsibilities will also include writing new software and documentation of training materials and manuals. Prior training experience, and excellent written and communication skills. Working knowledge of MS-DOS, UNIX, and Windows operating systems are required. Windows95 and WindowsNT knowledge is a plus. Candidates must be willing to travel and have reliable transportation.

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JOB CODE: CL1869
Technology includes Mainframe, SUN, Stratus, and PC. Solve problems, develop workarounds, enforce standardization across all platforms, tools, and versions. Provide direct support CM process and tools. Help design, code, and certify IECM. Extensive experience in a software development environment required.

Project Leaders
JOB CODE: CL1870
Experience in COBOL, CICS, JCL, and VSAM mainframe technologies require. DB2/IDMS/IMS, FOCUS, EZTRIEV, PL/1, RPG, and Assembler knowledge a plus. Working knowledge of MS Word, Excel, Powerpoint, MS Project and/or Artemis also helpful. 5–10 years of experience.

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Project Leaders

Candidate must be effective at multi-tasking with strong project management skills in leading small to medium size projects and providing work direction for others. Must be a self-starter with excellent communication skills, both verbal and written. COBOL, DB2, C, and UNIX experience required, data warehousing experience a definite plus. JOB CODE: CW 406

Programmer/Analysts

Three or more years' experience including analysis and design of large information systems with proven ability in providing solutions to difficult problems. Must be comfortable working under only moderate supervision and must be a self-starter. Technical qualifications include proven programming ability with knowledge of COBOL, DB2, and VSAM highly desirable. Experience with IDEAL and Datacom a definite plus. JOB CODE: CW 288

Manager - Information Services Security

Develop, implement and direct the administration of corporate business practices which will protect corporate data assets. Successful candidate will possess excellent organization and negotiation skills, outstanding written and oral communication skills and experience and understanding of concepts of Technology Architecture to assess security exposures. Exposure to Technology Architecture in a distributed environment also required. JOB CODE: CW 394

Middleware Consultant/Analyst

Working knowledge, experience and proficiency in one or more of the following areas: DOS, Windows, Windows NT, Solaris and/or Novell Netware. PC based 4GL tools such as Visual Basic, Visual C/C++, Powerbuilder, DB2, DB2/2, Sybase, Oracle, Client/Server design, Cross-platform (IBM Mainframe, PC SUN/UNIX) integration and communications. Program design and construction experience desirable. JOB CODE: CW 425

Database Analyst - Operational Database Administration

Design and implement physical databases which support the concept of a sharable base of corporate information. Manage production databases to ensure performance and availability. Requires a minimum of 6 years' in the database administration arena, with in-depth experience in DB2/MVS and UNIX distributed database management systems. Knowledge of Information Resource Management principles and logical data modeling also required. JOB CODE: CW 60A

Database Analyst - Data Warehouse/Decision Support

Develop technical design of databases to enable effective end-users access. Support end-users and developers with data access strategies and facilities. Contribute to the management and enhancement of the DBMS environment. Requires a minimum of 6 years' in the database administration arena, with in-depth knowledge of DB2/MVS, UNIX, and AIX preferable; DB2/PE or DB26000 Experience with VLDB's (Very Large Databases) in an MPP environment, with SP2 highly desirable. Knowledge of and experience with Data Warehouse/Decision Support concepts and techniques a plus. JOB CODE: CW 60

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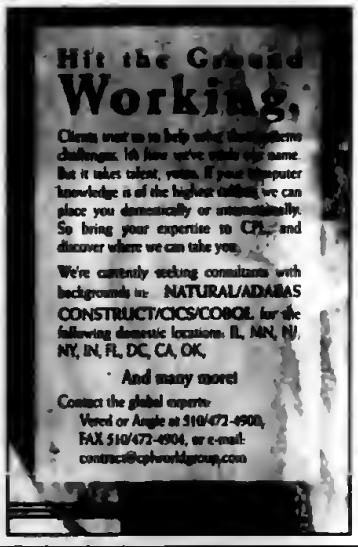
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Software Engineer: Develop Intelligent Transportation System software, using map database & real-time traffic information to manage the traffic patterns, design & develop map databases, route determination & guidance software, user interfaces & navigation service network. Tools: UNIX system (Ant Solaris, Sun), C/C++, Visual C++, Motif X-windows, HTML, GUI, PVM, and Real-time Operating Systems, & Client/Server. M.S. in Computer Sc. or E.E. Eng., 1yr. exp. in the job or as a Computer Engineer & 1 yr. exp. with above tools are required. $20.05/hr., full time. Must have proof of legal authority to work permanently in the U.S. Resume & cover letter to: Gwen Malone Shields Enterprise Inc., 212 E. Ohio, Chicago, IL 60611.

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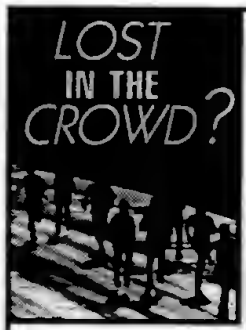
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Lotus Notes Technical Analyst

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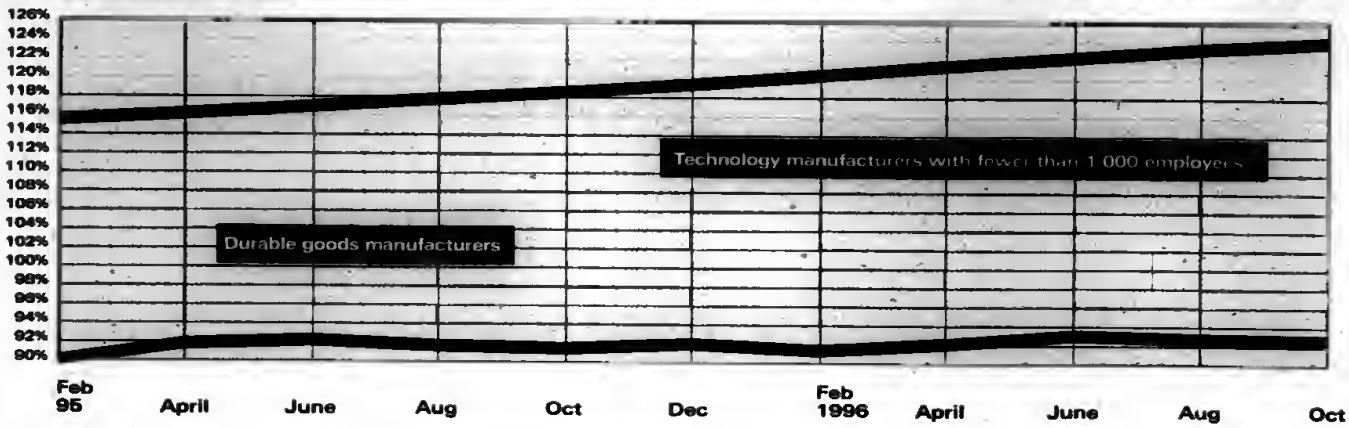
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RIDING THE FRAME-RELAY WAVE

By Steve Alexander

Frame relay, which competes with leased lines for data transmission, is catching on in a big way.

By year's end there will be 15,400 companies using frame relay in the U.S., up from 8,680 a year ago, according to Vertical Systems Group, a consultancy in Dedham, Maas.

Frame relay is a packet-switching technology that transmits variable-size frames of data. It's best-suited for bursty traffic. But analysts say its growing popularity has more to do with money than technology.

LEAPS AND BOUNDS

U.S. frame-relay service revenue is expected to climb from $185 million in 1994 to more than $5.1 billion in 1999



Source: Vertical Systems Group

GOOD ECONOMICS

"Frame relay is first, last and always an economic play," says Tom Nolle, president of CIMI Corp., a consultancy in Voorhees, N.J. "It is dramatically less expensive to use frame relay if you are choosing a new frame-relay virtual circuit vs. a new leased line of similar speed, say, 56K bytes. Where frame relay is most economical is on the 'thin routes,' where the user doesn't have a large amount of data traffic."

Frame relay has been the most economical way to interconnect geographically dispersed LANs, says Rosemary Cochran, a principal at Vertical Systems Group. That's because the cost of dedicated leased lines is distance-sensitive, but the cost of frame relay isn't. In a best-case situation, frame relay can be 30% to 40% cheaper than leased lines, she says.

A leased line ia a permanent, dedicated telephone line used for high-speed communications. Frame relay provides high-speed connectivity only when it's needed through a "permanent virtual circuit" that defines a logical path between two switches on a network. There are monthly charges for leased lines and frame-relay permanent virtual circuits, but the charges are assessed differently.

U.S. frame-relay revenue is projected to reach $1.3 billion this year and rise to $2.5 billion next year, Cochran says. This year's U.S. market leaders are AT&T Corp., with a 37.5% share, MCI Communications Corp., with 19% and Sprint Corp., with 17.5%.

Michael Smith, a network services analyst at Datapro Information Services Group, Inc. in Delran, N.J., says regional Bell operating companies tend to be smaller players in the frame-relay market because they can't provide nationwide connectivity.

There are pricing differences among the national providers, but those gaps are becoming less significant as competitive factors such as network management and local access facilities (entry points for frame-relay service) become more important, Smith says. "The carriers are all much more public about pricing information these days, and they are in some ways starting to resemble each other" when it comes to prices, he says.

But there are some concerns about using frame relay. One is that it's not always cheaper than leased lines, Nolle says. "I've seen situations where the user's incremental price of moving data from Point A to Point B was one-third less with a leased line than with frame relay because he already had high bandwidth in place with good economies of scale," he says.

Another concern is that frame relay has a higher riak of delaying or losing data, Nolle says. "Because frame relay is a multiplexing service, it combines multiple user traffic in a statistical way on a network. That creates a risk of delay or of lost data that a leased line does not have," he says. But many of today's applications can tolerate such problems, he adds.

Frame relay also has limitations. It isn't very useful in situations where voice, data and video are being integrated because it isn't an ideal voice transmission medium. "One of the considerations io choosing frame relay is how important voice traffic is to you," Smith says. "There are proprietary solutions for running voice over frame relay, but they don't produce good voice quality."

Analysts say frame-relay users aren't likely to migrate to Asynchronous Transfer Mode (ATM) technology any time soon. Cost comparisons between ATM and frame relay are difficult to make, but frame relay is a more proven technology.

Alexander is a freelance writer in Edina, Minn.

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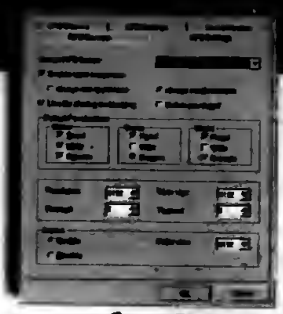
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Finance & Investing



If you've given up on investing in the stock market because you don't have the time, here's something that could pull you back in: online resources that help investors save time by providing research shortcuts.

A growing number of World Wide Web sites are operating as one-stop shopping spots by providing investors with links to dozens of other investor resources on the Web (see chart). This means investors don't have to waste time trying to find resources. They can hop onto one site and access a full array of investor resources — from investment tips and corporate profiles to stock quotes — instead of hunting through cyberspace for each piece of information.

By Alan Radding

I recently set out to see if the one-stop shopping concept would really save time. I gave myself 30 minutes, and I opted to work with the Investment Advisor Xchange (www.iaxchange.com), which offers a range of investor resources, including a research library.

Then I selected PairGain Technologies, Inc. as the target of my research. I thought this choice would provide some interesting results because the company is in a new market: digital subscriber line communications, which uses advanced technology to squeeze high-speed transmission out of existing copper wires.

From the Investment Advisor Xchange home page, I clicked on its Stock Research page, which has links to 20 investment information Web sites. It also includes a ready-made set of bookmarks, the favorites of David Lucca, the creator of the Investment Advisor Xchange site and a principal at Rhoads, Grunden, Lucca, a Dallas-based investment management company with a $50 million portfolio. A bookmark is a stored URL that makes it easy to regularly access a site without having to repeatedly retype the address.

My first stop beyond this page was the Wall Street Research Net (www.wsrn.com). I didn't know PairGain's stock symbol, but the site can handle a search by company name. While it sounds like a small detail, searching by stock symbol is usually faster and prevents getting responses back on multiple companies with similar names.

The Wall Street Research Net site covers the major U.S. and Canadian stock exchanges, including over-the-counter operations. My search showed PairGain's stock symbol is PAIR, and I found links to the company's home page as well as to Securities and Exchange Commission filings.

Since PairGain is a technology company, I jumped to Silicon Investor (www.techstocks.com), which covers about 450 high-tech companies. This site offers such useful data as industry group comparisons, which show a company's performance alongside others in its industry.

My last stop was the Primark site (www.pirc.com/earn_con.cgi), where I viewed consensus earnings estimates on PairGain. Primark offers earning estimates from the Institutional Brokers Earnings Service. PairGain had a high price/earnings ratio, not unusual for a young firm with relatively small revenue but good long-term revenue prospects.

Sure enough, in just 30 minutes, I had collected enough data to help me evaluate PairGain as an investment opportunity. For example, I discovered its stock price is below its record high but moving back up from its recent low. This is a good sign that suggests the stock may be poised to move upward if the other investment basics also are right, Lucca says.

As an added bonus, the only expense for this research was my online time.

Not every company search will be as easy as the PairGain search. If the company is small or not yet publicly traded, look for links to other investment resources. Lucca recommends the Small Cap Investor (www.financialweb.com), which covers small cap stocks, including new listings and initial public offerings, as well as the IPO Monitor (www.ipodata.com) and NestEgg's IPO Center (www.nestegg.iddis.com/ipo).

Radding is a freelance writer in Newton, Mass.

RESEARCH SHORTCUTS

A sample of Web sites where investors can find a slew of resources

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The Week in Stocks

Gainers

PERCENT

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MathSoft	16.7
Intersolv Inc.	16.1
American Software Inc.	14.3
Adaptec Inc.(M)	13.8
CrossComm	12.5

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Cabletron Systems	7.88
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Computer Associates	5.38
Seagate Technology(D)	5.13
Compaq Computer Corp.(M)	4.75
Adaptec Inc.(M)	4.75

Losers

PERCENT

DOLLAR

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CyberMedia's self-help

Software, shmsoftware. For some investors, if you've seen one software company, you've seen a thousand of them. But analysts and investors took notice when CyberMedia, Inc. (NasdaqCYBM), which develops software-with-a-twist, made its initial public offering.

CyberMedia's self-help utility software products, First Aid and Oil Change, aren't your run-of-the-mill fix-it PC utilities. The two packages come with subscriptions that proactively repair problems with patches and virus updates; the subscriptions also can diagnose a PC's systems troubles and fix them.

CyberMedia's First Aid warns users when hard-drive failures are about to occur and software files are corrupt. Plenty of utility products perform similar useful tasks, but First Aid also goes out on the Internet and connects to CyberMedia's data bank of industry software updates for the proper patch.

Oil Change performs a similar task for users. It takes inventory of the software on the PC where it is installed and searches the Internet for any free upgrades of that software. When it finds the upgrades, it tells its owner and can quietly and unobtrusively install the upgrade.

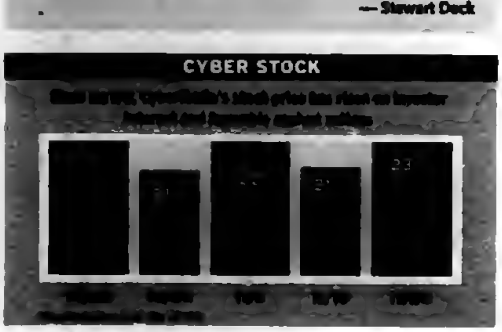
"This is such a change from the usual software model," says Chris Galvin, an analyst at Hambrecht & Quist LLC in San Francisco. "CyberMedia has put together a more sustainable software franchise where the value they provide isn't limited to the day you buy a shrink-wrapped box. [With the subscription], users also buy the front end to an ongoing service."

Galvin added that CyberMedia's products should come as a relief to other software companies. The products could help those companies reduce the telephone software support they must provide to explain where to find patches and updates on the Internet. Galvin has a Buy rating on the stock. Other analysts have taken an interest in CyberMedia. Lehman Brothers, Inc. has initiated coverage of the company with a Buy rating.

— Stewart Deck

CYBER STOCK

Since its IPO, CyberMedia's stock price has risen as investor interest and favorable market ratings



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AIT	68 00	49 63	ANTEC Corp	58 50	1 88	3 0
A	68 00	19 25	AT & T	57 00	-0 75	-2 0
ASND	14 88	08 75	Ascend Communications	69 13	1 25	1 8
BNYN	12 63	9 25	Banyan Systems Inc	3 75	-0 25	-6 3
BAY	99 00	18 13	Bay Networks Inc	25 88	3 50	10 2
SBI	80 13	41 50	Bell Atlantic Corp	81 63	0 38	0 5
BLS	95 00	95 25	Bellsouth Corp	50 00	1 00	3 5
BBRT	92 25	9 13	Benchmarq Technologies	31 75	-0 00	-1 6
CS	97 19	11 00	Cabletron Systems	80 00	7 00	10 8
CSCC	31 25	20 81	Cascade Communications	58 75	0 75	1 2 7
CCBM	29 13	11 75	Centigram Communications	14 25	1 44	11 2
CSCO	58 00	12 00	Cisco Systems Inc	48 00	4 12	8 5
CLH	9 25	3 50	Compression Labs Inc	4 13	-0 25	-5 2
CMNT	10 00	9 00	Computer Networks Tech	9 00	0 00	0 1
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MCIC	31 88	22 38	MCI Communications Corp	29 00	5 38	2 2
MNPI	34 50	5 00	Micrognon Inc	11 75	0 00	0 0
NETM	34 00	0 38	NetManage Inc	9 00	-0 00	1 0
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KEY: (H) = New annual high reached in period (L) = New annual low reached in period

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Data warehouses

CONTINUED FROM PAGE 1

departments that had to labor long and hard just to get management backing for warehousing projects. But experienced hands said it also puts the onus right back on IS, which now has to figure out how to load new information into the data warehouse with minimal disruption to end users.

Further aggravating the situation, they added, is pressure from information-hungry end users for more frequent updates of data warehouses and data marts. And tools to orchestrate the whole process are still lacking, the IS managers said.

> The idea behind decision support data is that it's available when you need to make a decision
>
> – Christine Muser, Hoechst Marion Roussel

"We're quickly getting out of the time frame where we can shut down a data mart for, say, 12 hours while we do a load. That just doesn't work anymore," said David Buch, IT director of data warehousing at Capital One Financial Corp. in Falls Church, Va.

The credit-card company runs a half-dozen big data marts that hold a total of 2T bytes of data and are fed by more than 100 different source databases. Managing the feeding process eats up "a lot of people resources" and is one of the reasons Capital One's data warehousing staff has jumped from six people a year ago to more than 40 today, Buch added.

AROUND THE CLOCK

Most of the reloads are performed weekly, but Buch said users are asking for more frequent updates and insisting that the data marts be available even during the wee hours to run long unattended queries. "They may not be there working at night, but their machines are," he said.

To get by, Capital One does a heavy amount of up-front data summarization and then runs "hot loads" in which new data is added while querying continues against the existing pool of information. Having found no magic bullets among the tools offered by vendors, the company also is writing automated monitoring software that will serve as "an early warning system" for corrupted data, Buch said.

Doug Lynn, an analyst at Meta Group, Inc. in Stamford, Conn., said he gets 10 to 15 calls per week from clients looking for answers to the data warehouse loading problem. But there are no easy fixes. He said packaged tools that are available now "run out of gas as you try to scale up," forcing users into do-it-yourself mode.

WEEK WAIT

Due partly to the logistical difficulties, 84% of 200 warehousing sites surveyed earlier this year by The Data Warehousing Institute in Bethesda, Md., said they still wait more than a week between warehouse reloads. "The load time heads toward infinity when the database sizes get real large," said Alan Paller, director of research and education.

Hoechst Marion Roussel, Inc. hopes to minimize load complexities on a 200G-byte data warehouse it is piloting simply by replacing all of the data each month. The goal is to cut the monthly loading chores to two days of preprocessing and less than a day of downtime for feeding, said Christine Muser, data warehouse project leader at the pharmaceuticals maker in Kansas City, Mo.

"But there's still a lot of work that we need to do to get there," Muser said. "It's a real challenge." She and the one other employee assigned to the project are exploring a multitude of programming techniques and hardware setups, "but finding the right mix isn't easy," she added.

Despite the limited resources, the message is clear that the data warehouse can be off-limits to users for only a short time, Muser said. "The idea behind decision-support data is that it's available when you need to make a decision," she said.

Customizing Web sites aims for repeat traffic

CONTINUED FROM PAGE 1

plan significant investments in personalized Web sites in the first half of next year.

The lure of customization is a basic one: Build repeat business.

"You want to try to retain your subscribers by serving them better," said Ivan Izikowitz, technical director at Virgin Net Ltd. "The way to think of it is by analogy. If you had a corner shop and every time you go in there you're greeted by name, and they have exactly what you're looking for, you would be more likely to shop there than in the large, anonymous supermarket."

THE SMALL PICTURE

Like competitors CompuServe Corp. and America Online, Inc., Virgin Net, beginning in March, will offer its U.K. subscribers discussion groups, chat rooms, news and information about health, personal finance and recreation. But when Virgin Net users log in, they will see only the areas that they have expressed an interest in or visited before. Virgin Net last week opened as a basic dial-up Internet service provider.

Virgin Net uses software from BroadVision, Inc. in Los Altos, Calif., to create rules for handling individual users. Users are guided into various areas based on how they answered registration questions. A user who says he likes sports, for instance, might be shown sporting information. The software tracks users' online behavior and reacts accordingly.

"If you are repeatedly buying golf equipment and I'm buying boating supplies, it'll show you golf bags, and it'll show me life jackets," explained Jon Thom, vice president of marketing at Fingerhut in Minnetonka, Minn. The is company also using the BroadVision software to build its site.

Other vendors, such as Brightware, Inc. in Novato, Calif., and Firefly Network, Inc. in Cambridge, Mass., offer software that uses artificial intelligence, neural networks and sophisticated statistics tools to analyze users' behavior and predict what each user might like to see in the future.

Josh Bernoff, an analyst at Forrester Research, Inc. in Cambridge, Mass., said customization will be key to firms that seek business success on the Web.

"The Web is a medium that doesn't have nearly the broad reach of mass-market channels like television and print," Bernoff said. "It's pretty clear that the right way to do business on it is to deliver to individuals what's appropriate to them as individuals."

Money's no object for a custom Web fit

The lure of repeat business has enticed companies to spend impressive sums on customization features for their Web sites.

The Illinois Chamber of Commerce is spending $1.4 million on its site, said Peter Cruices, assistant to the president.

The bulk of that money is spent on custom programming and analyzing the kinds of skills a person needs to do a particular job.

Ultimately, the chamber's site will ask job-seekers a series of sophisticated questions about their qualifications. For instance, a person who describes himself as a machinist will be asked about 144 separate job skills. Potential employers will face a similar grilling.

But the payoff comes later. When they log in again, businesses will see only candidates who meet or come close to the qualifications they have asked for, and job-seekers will see only jobs they are likely to land, Cruices said. — Mitch Wagner

Software helps create Web magazine sites. Page 65

HP backup method raises questions

▶ *Competing vendor claims data is jeopardized when users are online*

By Jaikumar Vijayan

A VENDOR DISPUTE over different ways to back up data on the HP 3000 platform raises the issue of what customers must consider before they back up a database while users are online.

Orbit Software, Inc. claims that a recently announced feature in Hewlett-Packard Co.'s TurboStore backup software for the HP 3000 could jeopardize the data integrity of systems that use it.

According to HP, its new True-Online feature allows HP 3000 administrators to back up data without requiring applications to be closed or users to log off.

COMPROMISING POSITION

But Orbit has claimed in letters it mailed to several dozen HP 3000 customers and prospects that HP's method compromises the so-called logical integrity of the data.

Orbit, based in Point Richmond, Calif., develops similar software for the HP 3000 platform.

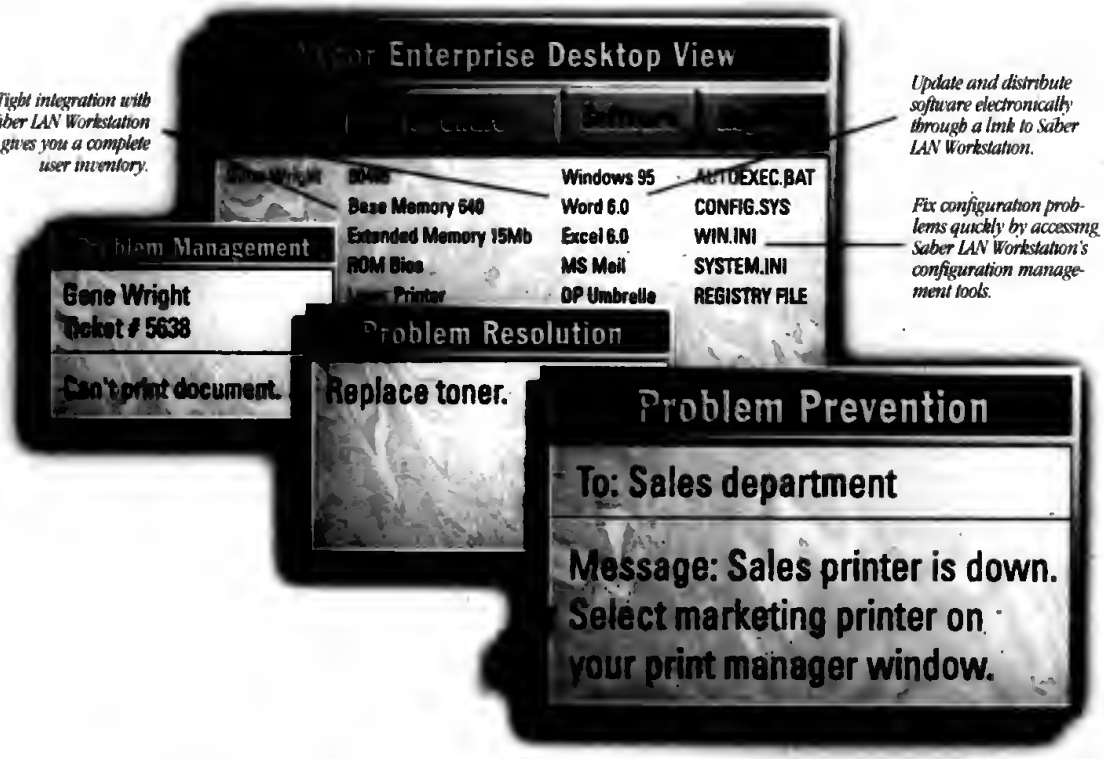
In response, HP has been sending its own letters that claim its software doesn't compromise the data.

Ironically, the nature of the problem is such that customers are unlikely to easily find out if the integrity of their backed-up data has been compromised, said Ron Seybold, editor of "The 3000 NewsWire," a newsletter in Austin, Texas.

Periodical postage paid at Framingham, Mass., and other mailing offices. Posted under Canadian International Publication agreement #0585697. Computerworld (ISSN 0010-4841) is published weekly except a single combined issue for the last two weeks in December by Computerworld, Inc., 500 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171. Copyright 1996 by Computerworld, Inc. All rights reserved. Computerworld can be purchased on microfilm and microfiche through University Microfilms Inc., 300 N. Zeeb Road., Ann Arbor, Mich. 48106. Computerworld is indexed. Back issues, if available, may be purchased from the circulation department. Photocopy rights, permission to photocopy for internal or personal use is granted by Computerworld, Inc. for libraries and other users registered with the Copyright Clearance Center (CCC), provided that the base fee of $3 per copy of the article, plus $.50 per page is paid directly to Copyright Clearance Center, 27 Congress Street, Salem, MA 01970. Reprints (minimum 500 copies) and permission to reprint may be purchased from Sharon Bryant, Computerworld, Inc., 500 Old Connecticut Path, Box 9171, Framingham, Mass. 01701-9171. Requests for missing issues will be honored only if received within 60 days of issue date. Subscription rates: $3 a copy U.S. — $48 a year. Canada — $110 a year. Central & So. America — $150 (surface). Europe — $295 a year; all other countries — $395 a year. Subscriptions call toll free (800) 669-1002. POSTMASTER: Send Form 3579 (Change of Address) to Computerworld, Box 2044, Marion, OH 43305.

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COMMENTARY

Open systems: Not perfect, but preferable

David Coursey

"Why is openness so important to you and so many other analysts?" asks a reader somewhere out on the Internet. He goes on to write, "'Openness' to me means communism, poor design, least common denominator, little innovation. 'Proprietary' to me means competitive, free market, well-designed products, innovation, high performance, etc. Proprietary is not always a bad thing."

How can someone not see the rich irony in sending an Internet E-mail message that asks why open standards are such a good idea? If the reader were still running a proprietary E-mail system capable of only talking to others of its kind, we probably wouldn't have had the discussion. Only four years ago, my business card listed a half-dozen E-mail addresses.

As for communism, I suspect he really meant socialism, but I couldn't disagree more. Open standards are the big trends on which the little ones ride. The IBM PC architecture is, for all practical purposes, an open platform. Apple's Macintosh is just trying to become one. Lotus Notes has been a closed platform, but Netscape's new Collabra is built atop an Internet-style news server. Time will tell which approach works best.



Novell's NetWare is a closed platform that has tried to become open to its friends. TCP/IP, on the other hand, has supplanted seemingly every other LAN and WAN protocol because openness is more important than whatever cool features came from being closed.

The Java phenomenon is perhaps the best example of what openness can drive: a full-fledged feeding frenzy. Sure, Java, like most everything else, is only open to a point. And if Microsoft has its way, the point will turn into a huge plateau. Microsoft's ideas concerning openness leave something to be desired, but as the reader pointed out, maybe that isn't such a bad thing.

It's hard to claim that Microsoft isn't among the most important forces that drive computing today. But two years ago, Microsoft was *the* force. Then the Internet happened, and even the mighty had to completely rethink — and reconfigure — its strategies to take openness into account. Microsoft is a great company because it's been able to do this so completely. Microsoft is a frustrating company because its concept of openness goes only so far.

I'm for open standards because people need to work together, and their computers must do the same. Proprietary standards never brought multiplatform companies together on one network where information is easily shared; Internet standards have done it almost overnight.

Sure, there's a long road ahead, but open standards — presented in the form of the Internet — have done more to advance computing in the past two years than happened in the previous decade.

Open standards sometimes leave a lot to be desired, and they tend to progress slowly.

All of the reader's criticisms were reasonable. And his defense of proprietary designs makes some sense, too. The problem is that until we're willing to let one vendor make all the decisions, open standards remain the glue that holds us all together.

And a reminder: A vendor that's big enough to give it all to you is big enough to take it all away.

Coursey thinks it's funny that the term "open systems" fell from grace about a year before the Internet gave open standards their biggest win. Drop him a note at david@coursey.com.

Expanding networks outstrip security

Charles Babcock

Don't look now, but your slip is showing. I mean, it's like you left for work without putting on your pants.

And you, the genial IS manager, are vaguely uncomfortable. You know everything looks normal, but it *feels* like something's wrong. You feel as if you were in a bad dream that intrudes more and more into your waking hours, as what was once firmly in your grasp slips away. Your vaunted ability to secure the corporate data is ebbing.

Take hypothetical power user Schneider over in your finance department. Last week, in a moment of frustration over what he saw as poor IS service, he unplugged from the corporate network and dialed out to a favorite Internet service provider without anybody's approval. He thought he was just being smart, getting the job done. But what he was really doing was opening an unguarded path into the company. Schneider's connection was outside the firewall that screens incoming Internet traffic.

Nothing came of this little transgression, of course.



Or did it? Would you know if an intruder waltzed in through this back door and looked around your premises? Chances are, if you say you haven't had intruders, you're just ignorant. You haven't figured out how to detect them.

Granted, the Pentagon or the White House or the CIA will attract more probing fingers than Pete's Shoes in Podunk Junction, Pa. But every business has assets. If Citibank can be relieved of $10 million, then the assets of *any* organization can be put at risk. After all, banks understand security and implement the correct protections, don't they?

ANYONE CAN 'SNOOP'

At the Computer Security Institute's 23rd annual conference in Chicago recently, several speakers pointed out that Snoop, a Unix utility for identifying passwords used on the network, now ships with Sun Microsystems' Solaris. The utility is intended to be used by the system administrator, of course, but it's generally available.

Satan is an easy-to-use program for exploring the loopholes in a Unix system. It was distributed for free by its authors over the Internet to allow anyone to check his own systems. In today's unregulated environment, the difference between a useful analysis tool and a system break-in tool lies solely in the eye of the beholder.

The ability to peer around corners and look through previously hidden holes is advancing rapidly. Your network is expanding to include business partners and suppliers, trusted parties screened through the firewall.

But the systems you use to do the screening are commonly known and understood, and they aren't hacker-proof unless you've invested heavily in security measures.

So far, the sheer amateurishness of the Internet and all it offers has protected us. The criminal mind is just becoming cognizant of the possibilities inherent in this new, open environment.

With your systems, nothing need be destroyed or maliciously damaged for a serious breach to occur. Access alone is a serious violation of business integrity. What would it be worth to your competition to have a copy of your customer database? Your next bid proposal? Business plan? Executive salaries?

The stakes have gone up dramatically in the need to protect corporate data. In all likelihood, your security measures haven't kept pace. It's time to redouble your security management efforts.

Babcock is Computerworld's technical editor. His Internet address is charles_babcock@cw.com.

The Back Page

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Dispatches & images from the fringes of the electronic frontier

Inside Lines



Katharine Windsor, MIS project manager at Bacova Guild Ltd., two weeks ago told her tale of woe regarding Quarterdeck's absent help desk [CW, Nov. 11]. "This kind of company support could make me start to question the product," she said. This week she's happier. Since the article appeared, Quarterdeck officials have promised her a free year of technical support and a discount on her company's next Quarterdeck software purchase. But we goofed with this one: If users are searching for the Notes Guy for Notes-related support questions [CW, Nov. 18], the correct uniform resource locator is w3.one.net/~dhatter/lnguru.htm. To pass complaints or tips on to news editor Patricia Keefe, call (508) 820-8183 or E-mail her at patricia_keefe@cw.com.

STOPPING WATER FIGHTS

In many regions – from Southwest U.S. to the Nile river basin – water is a precious and often fought-over resource. So Aris Georgakakos, a researcher at the Georgia Institute of Technology in Atlanta, developed a decision-support system for managing water resources. It can predict how changes in rainfall, rivers, human demand and hydroelectric dams will affect local water supplies.



Tired of the [illegible] computer [illegible] duty [illegible] ington in San Mateo, Calif., has the look of "business-casual sophistication" and numerous compartments.

News to ponder

Glen Jarvis was bored with his computer job, so he started a business, "Butler in the Buff," Reuters reported. Jarvis charges $15 per hour to clean houses in Kansas City, Mo., in the nude.

Automakers are worried about runaway growth in the software needed for today's microprocessor-run cars, *Electronic Engineering Times* noted. An engine controller has 100,000 lines of code.

Four years ago, the government launched the Energy Star program to power down idle PCs, but energy savings have been small. One reason: Many users disable the power-saving feature because they don't want to wait for the PC to wake up from sleep mode. *The Washington Post* reported.

Buzzwords

- **Beepilepsy: The brief seizure people get when they're interrupted by their beeper.**
- **Bookmark: To take note of a person for future reference (borrowed from Web browsers).**
- **Dancing baloney: Gratuitous animated graphics and special effects on the Web**
- **Infomercials: Internet-based infomercials**
- **Workware: Next-generation workflow software that adapts to process changes.**

Sources: *Wired* magazine, San Francisco; AT&T, Basking Ridge, N.J.; Giga Information Group, Cambridge, Mass.



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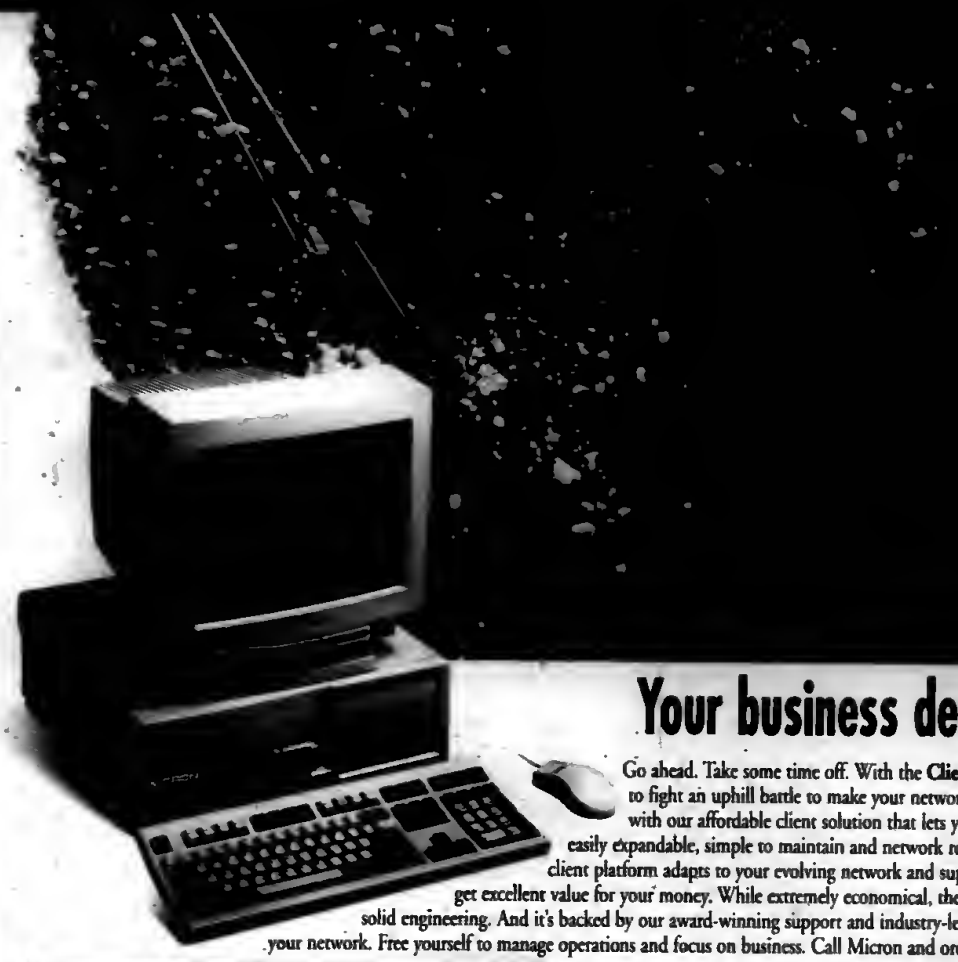
Play "The Lifestyle Game" and find out which of 50 consumer and demographic profiles fits your neighborhood. Is it Urban Singles or Close-Knit Families? Stars and Stripes (where folks buy Dodge trucks and Coors beer) or Country Home Families (fishing rods and chain saws)? Plug in your ZIP code at www.ends.com.

Computerworld reader Robert LeRoy reports that when he opened a package of CD-ROMs full of beta software from Microsoft, "inside the first flap was a real bug smashed onto the jacket." The beta titles included Windows NT Server 4.0. The question: Is this a bad sign?



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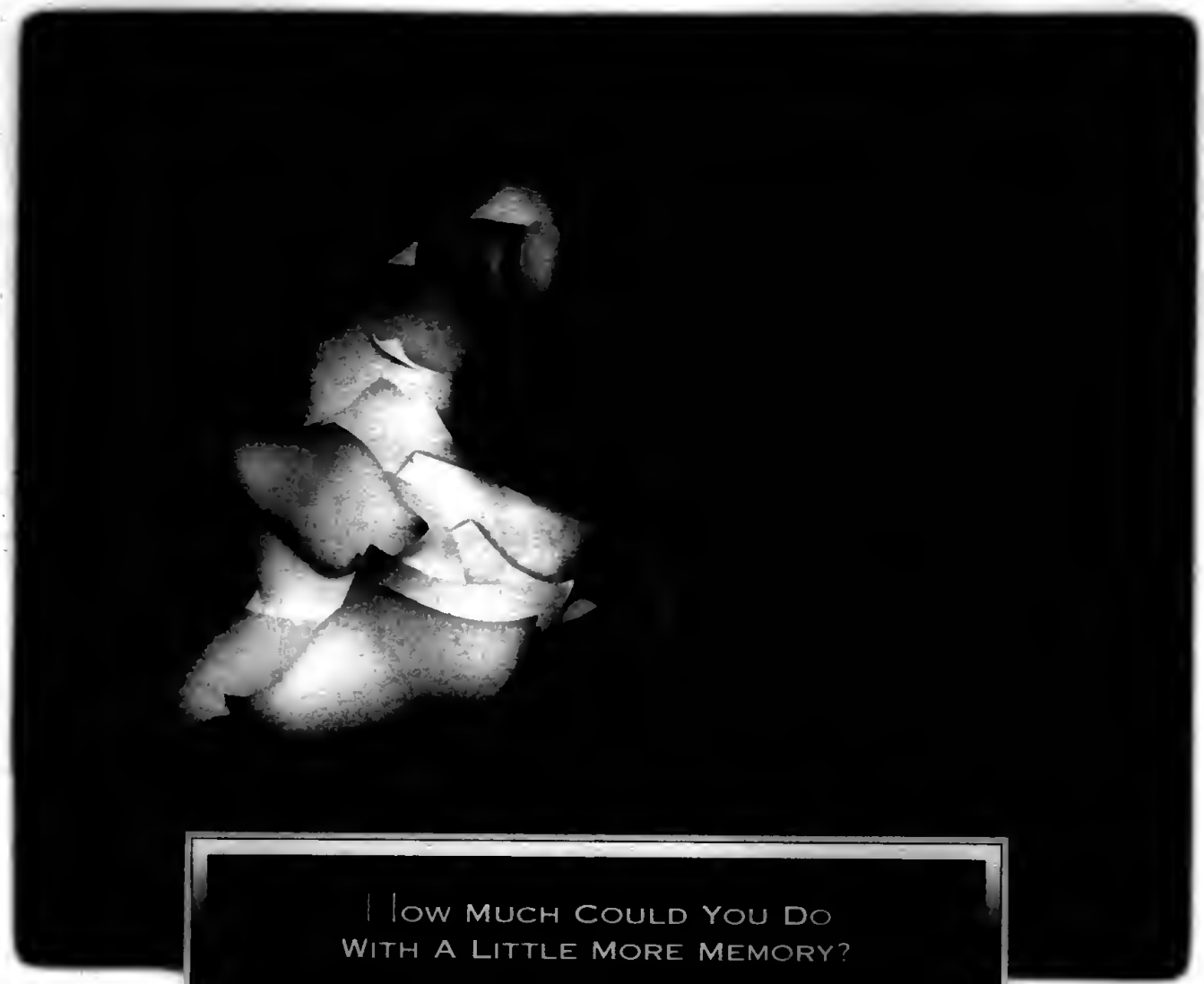
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